MANAGING AGGREGATE,
Cornerstone of the Economy

REPORT OF THE AGGREGATE ADVISORY PANEL
MARCH, 2001

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LETTER OF TRANSMITTAL

March, 2001

The Honourable Glenn Robertson
Minister of Energy and Mines
PO Box 9060 Stn Prov Govt
Victoria, BC V8V 1X4

Dear Minister:

It is our pleasure to submit to you the report of the Aggregate Advisory Panel.

The role aggregate production and processing plays in the provincial economy is little understood by British Columbians. Its use affects almost all aspects of our lives. The material is used in public infrastructure projects such as dams, highways, airport runways and bridges. It is used extensively in homes, offices, schools and hospitals. Scarcity of material is pushing up costs in some areas. The present planning processes are inadequate to address the need for aggregate production; neighbours frequently resent the activity; and regulatory processes are complex and confusing.

When your predecessor, the Honourable Dan Miller, appointed the Panel on July 19, 2000, he instructed us to review the planning, approval and management processes for sand and gravel pit and rock quarry resources on both private and Crown land throughout British Columbia. He told us to give special priority to the Lower Mainland, the Okanagan and southern Vancouver Island, where conflicts surrounding the development of aggregate resources are most pronounced.

Specifically, the Panel was requested to make recommendations on:

- The provincial and local governments' roles and responsibilities in a range of aggregate-related issues, including identifying and protecting aggregate resources to meet future needs;
- Factors and criteria to be taken into account when reviewing and approving aggregate operations and the respective authorities for considering these factors;
- Improvements and amendments to the permitting processes so decisions are more timely, efficient and less contentious;
- Policy and statutory changes necessary for any of the foregoing issues.

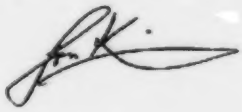
The Panel was asked to consult with and accept submissions from a range of people and organisations interested in planning, permitting and managing aggregate operations.

As an essential part of its review, the Panel held 11 public meetings throughout the province and met separately with many stakeholder groups over a six-month period. The Panel also invited input from First Nations and environmental groups. Additionally, it received 90 written submissions.

The Panel appreciates the courtesy and advice extended to it by various stakeholder groups, individuals and government ministries. They made a complex task congenial.

Yours truly,

Graham Lea
CHAIR



Jon Kingsbury

Ben Marr

Laurie Carlson

Attach.

EXECUTIVE SUMMARY

In July 2000, the Minister of Energy and Mines appointed the Aggregate Advisory Panel to review provincial policy concerning aggregate on private and Crown land throughout British Columbia. He instructed the Panel to give special priority to the Lower Mainland, the Okanagan and southern Vancouver Island, where conflicts surrounding the development of aggregate resources are most pronounced.

This is the Panel's report. In it we examine the under-appreciated role of aggregate in the Province's economy, the regulatory framework governing its extraction, processing and transportation, and inadequacies in planning for society's future construction and maintenance needs.

We engaged in an extensive consultation process that is detailed in the Appendix to this report.

In total we have made 47 recommendations for the government's consideration. This Executive Summary highlights some of the major ones.

KEY ISSUES AND RECOMMENDATIONS

Management and Planning

ISSUES

While aggregate is an essential resource, the aggregate industry is often an unpopular neighbour because of the noise, dust and heavy traffic it creates. Yet transportation costs dictate that the most economical source of aggregate is usually found close to where it is most needed for construction – and hence where people live. This creates conflict. Better planning would alleviate this situation by creating greater certainty for communities and for the aggregate industry. Thoughtful planning would also help protect British Columbia's natural beauty and wildlife. A comprehensive inventory of the Province's aggregate resources is needed to facilitate planning. Currently regional districts are constrained in their planning activities by lack of authority and responsibility to address supply and demand issues and to require member municipalities to conform to regional plans.

RECOMMENDATIONS

We recommend new legislation, to be called the *Aggregate Resource Management Act* (*ARM Act*), to guide aggregate resource planning in the province. The Act should define the planning process, empower regional districts to use the process to plan voluntarily, or at the direction of the Province, identify appropriate funding for both planning and mitigation of community impacts, and allow the Province to designate aggregate reserve zones at the local government level if necessary.

The ARM Act should mimic many of the provisions of the Growth Strategies Act for co-ordinated regional planning, including provisions for public input and dispute resolution.

The Province, the Union of British Columbia Municipalities and other stakeholders, should develop guidelines for regional district aggregate resource management planning to ensure province-wide consistency.

The likely supply and demand for aggregate throughout the Province over the next 30 to 50 years should be studied by the Province as a reference for planning purposes.

The government should conduct an inventory of aggregate resource potential to be shown on digital maps along with other resource information.

The government should identify environmental values such as fisheries habitat, groundwater use and vulnerability, community watersheds, wildlife habitat, endangered, threatened and vulnerable species, etc. that would limit aggregate extraction at each location with aggregate resource potential.

Regional districts should identify which land use and social values should influence decisions regarding aggregate extraction at each location with aggregate resource potential.

Regional districts should complete 30-year aggregate resource management plans and local governments should establish zoning to recognize and enable aggregate extraction consistent with those plans.

Funding

ISSUES

Aggregate resource planning will impose new costs on provincial agencies and regional districts. In order to expedite fieldwork, compilation, map presentation and public consultation required to complete the planning, additional funding should be provided to Provincial agencies and regional districts. Such funding should be derived from a new revenue source so planning costs do not displace other Provincial or local government funding initiatives.

RECOMMENDATIONS

The Panel recommends a new fee or levy should be imposed on commercial aggregate production on both Crown and private lands to fund the work referred to above and other aggregate related expenditures. Producers should be required to collect an Aggregate Resource Management Fee of about seventy five cents per tonne, from their customers on aggregate sold or removed from each pit or quarry. Fees should be earmarked for the purposes outlined above and held in a separately managed Aggregate Fund.

Local governments should receive a portion of this Fee directly to fund community and environmental impact mitigation measures. The Fee should not apply to aggregate extracted from provincially-owned pits and quarries and used by the Province for highways purposes.

Regulation

ISSUES

Many stakeholders feel that the regulatory regime is unnecessarily complex with overlapping authorities and opaque procedures. The current distribution of jurisdiction for the regulation of aggregate operations is confusing, with Federal, Provincial and local governments all potentially having a role.

RECOMMENDATIONS

To address this situation, where local governments have developed aggregate resource management plans consistent with *ARM Act* guidelines, extraction should be defined as a land use. This definition

would ensure that the responsibility for the land use decisions rests with local governments and would assist in creating appropriate zoning to implement the plans. *Mines Act* amendments, which we propose, would clarify that local government is the primary authority for deciding where gravel pits and quarries will be located.

Mines Act Amendments

ISSUES

There is much public dissatisfaction with the current *Mines Act* permitting process and related enforcement measures. Besides unhappiness with the inability of the *Mines Act* permitting process to deal effectively with land use issues, there is a general lack of confidence in the overall process. For example, there is no provision in the *Mines Act* for an appeal of a permit decision or order made by the Chief Inspector of Mines.

RECOMMENDATIONS

The *Mines Act* should be amended to enable appeal of permits and prescribed orders for aggregate operations to the Environmental Appeal Board and to add the authority to issue monetary penalties, consistent with other Provincial legislation such as the *Forest Practices Code Act*.

INTRODUCTION

AGGREGATE – AN ESSENTIAL RESOURCE

Aggregate is an essential resource, vital to the prosperity and well-being of British Columbians – although, chances are, they may not know it.

The term Aggregate describes sand, gravel and crushed bedrock used to build and maintain homes, roads, schools, hospitals, water treatment and distribution systems, sewers, playing fields, businesses and factories. Consumption in British Columbia is estimated at about 50 million tonnes per year.[1] In heavily-populated areas over 70% of annual aggregate use, most of it purchased by various levels of government, simply maintains or replaces existing urban infrastructure.

Aggregate is an essential resource, vital to the prosperity and well-being of British Columbians – although, chances are, they may not know it.

British Columbia is blessed with some of the best aggregate in the world. Historically, it has been readily available in most –but not all – areas of the province. We have become dependent upon inexpensive aggregate to support our lifestyles. At the coast aggregate use is critical for drainage. In colder interior or northern areas thick aggregate bases prevent frost heaving under roads. Winter sanding keeps highways safe.

Aggregate is not evenly distributed. Some areas of the province have very little. For instance, many northeastern communities east of the Rocky Mountains have difficulty locating adequate resources. In many other areas aggregate is abundant, but its value has not been recognized in community planning. Homes, businesses and institutions have been built over prime aggregate deposits, blocking access. In areas with limited local access aggregate must be hauled from more distant sources.

We have become dependent upon inexpensive aggregate to support our lifestyles.

There are over 900 permitted commercial gravel pits and rock quarries in B.C. plus thousands of additional non-commercial pits operated by, or for, the Ministry of Transportation and Highways and by forestry companies. Commercial operations sell their aggregate product or provide it as an ingredient for the manufacture of another product, such as concrete, that will be sold. Commercial operations alone directly employ about 3000 people. Many other jobs are directly dependent upon aggregate production, including road builders, cement and concrete manufacturers, concrete product manufacturers, concrete finishers, truck drivers and many building trades.

COSTS OF AGGREGATE

Aggregate is relatively inexpensive at its source. Although sand and gravel may have to be crushed, screened or washed to meet specifications for different uses, these processes are usually simple and cheap. Aggregate produced by blasting and crushing bedrock may cost 25% to 35% more than equivalent sand and gravel sources but produces a superior product for some applications. In some locations quarried rock may be the only available source.

Aggregate is relatively inexpensive at its source.

[1]This estimate includes the recorded production of 39 million tonnes plus an estimate of under-reported or unreported commercial and non-commercial production. In total, it equals a dump truck load for every person in the province.

Not all bedrock or all gravel can be used for concrete or asphalt.

For cost efficiency, users tend to prefer sources closest to the site where the aggregate is required.

Aggregate consumption is often related to population density.

Most processed aggregate is used for concrete or asphalt. Concrete comprises 81% to 85% aggregate. Asphalt pavement contains about 95% aggregate. The specifications for these uses have become more rigorous in recent years as engineers seek to improve the durability of their products. Consequently not all bedrock or all gravel can be used for concrete or asphalt. Individual rock fragments must be hard, tough, chemically stable and have the right shape, surface texture, porosity and density. Particle sizes must be carefully adjusted.

Delivery – usually by truck – often accounts for much of the cost of aggregate at a construction site. Since trucks are usually charged out on an hourly basis, hauling distances and traffic congestion affect delivered costs. Rising fuel prices are also a factor.

Trucking involves other costs too. Heavy gravel trucks are usually noisy and disturb residents and businesses along their route. Their size and slower acceleration retards traffic flows. Roads break down faster under the weight of heavy trucks necessitating more frequent repairs or replacement. Big aggregate trucks guzzle fossil fuels, their exhausts degrade air quality.

Although the per capita aggregate consumption varies by area (depending upon affluence, transportation options, housing styles, economic health, climate and other variables), most Canadian jurisdictions use from about 10 tonnes to 16 tonnes per person per year. The estimate for B.C. is about 13 tonnes per capita overall, with local variations.

HERE'S HOW WE USE AGGREGATE

SINGLE FAMILY HOUSING Assuming 2000 square feet, 500 square feet driveway, two-car garage.	**340 to 460 tonnes per dwelling**
TOWNHOUSE Assuming two- or three-storey wood-frame construction with underground concrete parking structure.	**200 tonnes per unit**
LOW RISE CONDOMINIUM Assuming three or four storey wood frame construction with underground concrete parking structure.	**38.5 tonnes per unit**
HIGH RISE DEVELOPMENT (both residential and commercial) Assuming concrete construction and underground parking.	**59 tonnes per 1000 square feet**
LOW RISE DEVELOPMENT (both residential and commercial) Assuming tilt-up panel wall construction with concrete slab-on-grade commercial space.	**35.8 tonnes per 1000 square feet**
UNDERGROUND UTILITIES Assuming: - sanitary and storm sewers in a single 2m wide by 4m deep trench - water mains in a separate trench 1m wide by 0.5m deep - electrical power and phone in trenches backfilled with native material - street lighting backfilled with native material.	**7,000 tonnes per kilometre of new utilities**
NEW ROADS Assuming road structure, sub-base, sidewalks, curb and gutter.	**10,300 tonnes per kilometre**
REHABILITATION OF EXISTING ROADS	**ranges from 40.5 to 324 tonnes per kilometre**

Source: Ministry of Energy and Mines draft report (1996), available at the Ministry website.

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Source: Ministry of Energy and Mines draft report (1996), available at the Ministry website.

Aggregate is used widely in home construction. Here's where it's found:

- Concrete foundations (sand and gravel)
- Slab backfill (sand or crushed rock fill under concrete slabs)
- Road base under driveways (crushed rock)
- Asphalt driveways (sand and gravel)
- Stucco (sand)
- Mortar (sand)
- Bricks (clay)
- Drywall (fine sand as filler)
- Plaster (fine sand as filler)
- Asphalt roofing grit (crushed rock)
- Perimeter drains (pea gravel)
- Sewer lines (sand and gravel for concrete pipes, sand for backfill)
- Soil additive for drainage (sand)
- Swimming pool filters (sand)
- Septic drain fields (sand and gravel)

Sand and gravel are the products of erosion over thousands of years.

It was the washing and sorting by running water to remove the clay from glacial deposits that created the sand and gravel deposits currently being mined.

Major capital projects have huge impacts. For instance, the construction of the third runway at Vancouver International Airport consumed 2.5 million tonnes of aggregate. Available local or regional reserves are necessary to accommodate surges in demand for such projects and for fluctuations in building activity related to swings in the economy.

GEOLOGIC ORIGINS

Sand and gravel are the products of erosion over thousands of years. In B.C. the most significant erosion event has been glaciation. Advancing ice ground the underlying terrain into boulders, gravel, sand and clay. Much of this material was compacted under the weight of the ice and deposited as glacial till. Water from melting ice later washed and sorted some of this glacial till and deposited it in deltas, terraces and other geological features that form our current aggregate supply sources.

It was the washing and sorting by running water to remove the clay that created the sand and gravel deposits currently being mined. These geological features are usually localized – meaning that sand and gravel deposits of commercial quality and quantity are not found everywhere. Even where deposits are found, there is often considerable variation in quality. Some parts of deposits are predominantly sandy, other parts contain more gravel. Some contain lots of clay or boulders. Exploration for aggregate may require drilling or test pits to determine the distribution of materials in the deposit to decide whether extraction is worthwhile.

The distribution of material sizes in a sand and gravel deposit will often determine the mining sequence. Several different areas of the deposit may have to be excavated simultaneously to get the necessary mix of fine and course aggregate to meet producer specifications. Also, specifications may change over time, resulting in further changes in the areas of excavation. Additionally, changes in demand volume may affect the rate of excavation. Hence it is often difficult for an operator to produce more than a conceptual mine plan in advance.

BEDROCK QUARRIES

Bedrock may be mined for aggregate if sand and gravel deposits are not available or if features of the bedrock type make it preferable for produce specifications. Bedrock quarries are also the best source for angular boulders used for rip rap (erosion protection for dikes and jetties) and landscaping.

Bedrock quarries are developed by using controlled explosions. A well-designed blast will turn the rock into rubble with very little displacement. The rock is then generally screened and crushed to meet contract specifications.

EXTRACTION OFTEN UNWELCOME

Despite our dependence on aggregates for our buildings and transportation infra-structure, aggregate extraction and processing operations often are not popular neighbours.

Aggregate operations are often seen as being dirty, noisy, unsightly and unsafe. This perception is under-standable because aggregate operations must disturb the land surface during the mining process. The exposed aggregate and topsoil increase the potential for dust and erosion. Its production is less attractive than most other potential uses of the land. The extraction, processing and transportation equipment is large, intimidating and noisy. Furthermore, there is an inherent safety risk to unauthorized visitors on the site.

Many pits and quarries may be operated only intermittently in response to local demand.

The aggregate industry likes to say that aggregate mining is a temporary use of the land and that the mine will be reclaimed to a land use consistent with the community when mining is completed. However, a temporary mine life of ten or twenty years is a long time for a neighbour uncomfortable with the activity next door. The fact that many pits and quarries may be operated only intermittently in response to local demand is a further aggravation. Adjacent land-owners are never certain when the site may be active or when it may be finally reclaimed.

The siting of aggregate production is constrained to locations where deposits of commercial quantity and quality exist and where they are close enough to market to keep delivery costs manageable. These constraints mean production must often take place near where people live.

LEGISLATION OUTMODED, REGULATION CONFUSED

Most local governments have not considered the need for long term local aggregate supplies in their community plans

Outmoded legislation and confusing regulatory jurisdiction means the permitting process cannot always consider the full social impacts of proposed aggregate mining and processing. There is also a compounding factor: most local governments have not considered the need for long term local aggregate supplies in their community plans. This oversight leads to controversy over proposed new aggregate operations since they are rarely considered to be consistent with existing plans.

While a few large companies dominate much of the private sector aggregate production, many small companies have important niche production with regional implications. Most private sector aggregate production comes from private lands, but companies also lease Crown land for aggregate production. Private sector aggregate production from Crown land generates royalties payable to the Province. These royalties have averaged about $5.9 million per year over the past three fiscal years and will likely increase as the market value of the production rises and as local governments impose more bylaw restrictions on operations on private land. In some cases local governments are exempt from payment of royalties for use of Crown aggregate.

Aggregate is not a mineral under the Mineral Tenure Act. Aggregate on Crown land is allocated under the Land Act. Aggregate on private land usually belongs to the property owner.

VITAL PRODUCT, UNPOPULAR NEIGHBOUR

The permitting and regulation of aggregate extraction and processing is a contentious issue in British Columbia.

Governments recognize extraction and processing operations can be incompatible with some adjacent communities due to noise, dust and truck traffic and potential environmental impacts, including long-term damage to the integrity of fish and wildlife habitats. But they also know aggregate is an essential component of most capital infrastructure construction and maintenance projects and that sustainable and affordable supplies benefit all citizens. The Province's overriding interest in aggregate resources may, in some instances, take precedence over local government interests.

Recognition of these positions creates a dilemma – the product is needed but the process of obtaining it is frequently undesirable. Moreover, while aggregate production benefits communities and the Province as a whole, the disruptions (noise, dust, truck traffic) are localized. Similar impacts by other industries can often be offset by flexibility with respect to location but aggregate operations are limited to the sites of naturally occurring resources. Additionally, aggregate resources are most valuable when they can be extracted near to their ultimate use, thus minimizing expensive and potentially disruptive trucking. At another level, poorly managed aggregate operations may have significant environmental impacts, particularly if sediment is allowed to enter watercourses. Sediment pollution hurts fish and damages their habitat.

In a growing community most aggregate is used near where people live, work and play – precisely the areas where the potential incompatibilities are most significant.

Not surprisingly, people want to keep aggregate operations out of their neighbourhoods, particularly where they have developed formal community plans that fail to recognize aggregate extraction as a desirable land use. While aggregate extraction itself is not considered by law to be a land use, and is not directly subject to local government land use zoning, zoning can be used to manage other production aspects such as processing. Furthermore, the Ministry of Energy and Mines may consider, but cannot be bound by, land use zoning when making a decision under the *Mines Act* regarding a proposed aggregate operation. This situation is pregnant with conflict. A *Mines Act* permit can be issued for aggregate extraction in an area the community has zoned for other uses. All gravel pits and quarries are regulated under the *Mines Act*.

The Ministry of Energy and Mines may consider, but cannot be bound by, land use zoning when making a decision under the *Mines Act*.

PRODUCTION CONSTRAINTS SHORT-SIGHTED

Local governments have the ability to regulate aggregate operations on private land through the use of soil removal bylaws, as described below. Many local governments, both municipalities and regional districts, have not yet used this ability and in some cases may have not used it appropriately. As a result, some communities have imposed constraints on aggregate production that may have severe long-term economic implications on themselves, neighbouring communities and the province as a whole. For example, a community that prohibits aggregate production within its boundaries effectively off loads aggregate production responsibilities and costs to neighbouring

Local governments have the ability to regulate aggregate operations on private land through the use of soil removal bylaws.

communities who must then supply not only their own needs, but also the needs of the prohibiting community.

Communities may develop soil removal bylaws without fully accounting for the unique needs of aggregate production.

Elsewhere, communities may have developed soil removal bylaws without fully accounting for the unique needs of aggregate production. Inflexible restrictions on hours of operation may prohibit the use of local aggregate for major public projects that are required to proceed outside normal business hours to accommodate commuter traffic. Rigid noise provisions – specific to aggregate mining – may restrict aggregate extraction yet allow unrestricted sawmill, rail yard, factory or other noisy activities in the same areas. Limitations on the duration of the permit may preclude operators from investing in specialized equipment that could reduce noise and dust or from completing mine plans that allow maximum extraction of a limited resource. Other provisions may not recognize the market driven nature of aggregate production that may force a pit into periods of dormancy when construction activity is low. The wide range of bylaw conditions that may be developed by individual communities can create a complex array of operating standards within a region, directly affecting industry competitiveness and hampering consistent enforcement.

STAKEHOLDER INTERESTS

The interests of the Province with respect to administration and regulation include:

- ensuring adequate supplies of reasonably priced aggregate of appropriate quality for the current and future needs of British Columbians;
- providing a fair return to the Province for the consumption of public resources.
- safe and orderly production of aggregate;
- minimizing the impacts of operations on cultural resources and the natural environment, including fish and fish habitat, water and air quality, wildlife and forest resources;
- returning mined lands to safe and appropriate uses;
- equitable and transparent processes with opportunities for public input;
- administrative efficiency without regulatory overlap;
- a positive and constructive working relationship between levels of government;
- best possible integration of aggregate operations with community values; and
- clarity of jurisdictional roles and responsibilities.

Most of these interests are likely common to all aggregate stakeholders. In addition to these common interests, it is felt that local governments' interests will also include:

- retention of land use planning prerogatives to develop and maintain high quality communities consistent with local needs and objectives and in particular the right to determine whether and where aggregate will be extracted and processed;

- recovery of costs of mitigating negative impacts on the community; and
- meeting the aggregate requirements of the local community.

In addition to the common interests, specific aggregate industry interests likely include:

- reasonable access to a resource of appropriate quality;
- certainty and consistency of the regulatory regime across jurisdictions; and
- a competitive market.

DIVIDED AUTHORITIES

The primary focus of inter-jurisdictional disputes is the authority to approve or reject an application to extract aggregate located on private lands within a local government jurisdiction. This is the "whether to" decision; the decision whether to allow aggregate production at a particular site.

The *Local Government Act* authorizes the passage of soil removal bylaws that permit, subject to Provincial approval of some provisions, a local government to make both the "whether to" decision regarding the location of aggregate extraction sites and the "how to" decision regarding detailed extraction and processing operations. Aggregate extraction sites are regulated as mines under the *Mines Act* and are also subject to the detailed "how to" standards defined in the *Health, Safety and Reclamation Code for Mines in B.C.* and in *Mines Act* permit conditions. In the absence of a soil removal bylaw, a *Mines Act* permit in effect constitutes a "whether to" decision.

Many other provincial (and federal) statutes also apply to aggregate operations – depending on whether there are potential impacts on wildlife, fish, fish habitat, agricultural or forest reserve lands, Crown timber, highways, water, cultural heritage resources, etc.

The *Land Act*, under the responsibility of the Ministry of Environment, Lands and Parks (MELP), authorizes the allocation of aggregate resources on Crown lands. The B.C. Assets and Land Corporation (BCAL), through delegated authority of the Minister of Environment, Lands and Parks, issues appropriate tenures for, and approves aggregate extraction under, the *Land Act* and Ministry of Environment, Lands and Parks policy prior to commercial production. BCAL generally defers to local government discretion regarding the "whether to" decision, and to the Ministry of Energy and Mines regarding "how to" conditions as defined in *Mines Act* permits, but is responsible for the land use and aggregate allocation decisions on both issues.

Commercial aggregate operations proposed within the Agricultural or Forest Land Reserves require prior approval of the Land Reserve Commission under the *Soil Conservation Act* or *Forest Land Reserve Act*. This approval constitutes a "whether to" decision. To obtain approval an applicant must demonstrate that the proposal will result in equivalent or enhanced site productivity upon completion.

PROCESSES REDUNDANT, CONTRADICTORY

A single aggregate operation may require permits or approvals from both the Province and local governments.

An applicant may have to obtain permits under soil removal bylaw, *Soil Conservation Act/Forest Land Reserve Act*, *Land Act* and *Mines Act* processes in order to operate legally. The application requirements and permit conditions imposed by these four processes may be

established for very different reasons and at different times, and may be redundant or contradictory with respect to each other. Typically, local government processes and requirements are designed to protect surrounding communities. The *Soil Conservation Act/Forest Land Reserve Act* processes are intended to maintain the integrity and productivity of the respective Reserves. The *Land Act* process is intended to make responsible land use decisions and maximize value from the land for the Province. The *Mines Act* process and operating requirements are designed to protect worker and public health and safety and to protect the natural environment.

Local governments generally have the local knowledge and planning resources to manage community planning issues effectively, but may not have appropriate engineering expertise and knowledge of industry practices to regulate the "how to" of on-site extraction and processing operations. The Ministry of Energy and Mines has extensive technical expertise to deal effectively with health, safety and certain environmental concerns, but often cannot adequately address community planning concerns.

Neither the *Mines Act* nor the typical local government permitting process formally investigates impacts on regional aggregate supply and demand before making the "whether to" decision. In general terms, local government decisions are more likely to reduce supply by prohibiting aggregate production in broad areas on the basis of local community land use decisions, regardless of the quantity and quality of available aggregate or local aggregate demand. The *Mines Act* process will restrict supply to a lesser degree based on site-specific technical concerns related to health, safety and impacts on the natural environment.

The Province has an interest in maintaining long-term affordable aggregate reserves to support both economic growth and the cost effective maintenance of existing municipal, provincial and federal infrastructure.

MOTH, in particular, is interested in maintaining affordable dedicated long-term aggregate reserves to support both capital projects and on-going maintenance of the Province's transportation infrastructure. Constraints on privately-owned reserves due to municipal planning decisions puts pressure on Crown land reserves needed for Ministry of Transportation and Highways' use. BCALC (administrator of aggregate operations on Crown lands on behalf of MELP) also has a strong interest in ensuring that decisions affecting Crown land aggregate production are in the best interests of the Province as a whole.

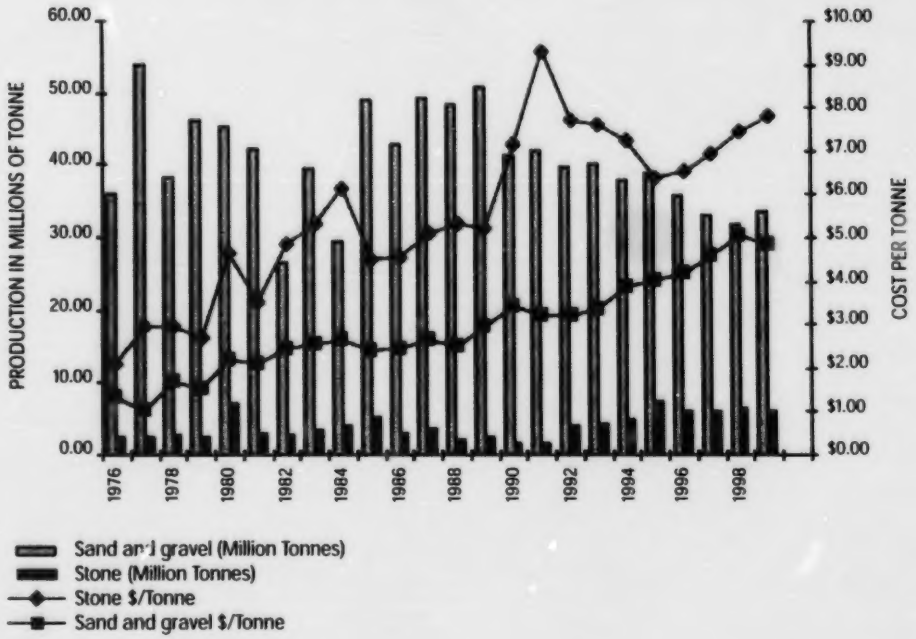
SUPPLIES DWINDLE, COSTS RISE

In high population areas such as the Lower Mainland, Southern Vancouver Island and the Okanagan Valley known aggregate supplies are depleting rapidly or are inaccessible due to land use conflicts.

In the Victoria area MOTH's cost of pit run gravel recently increased 65% from $12.00/yd3 to $19.85/yd3 due to the depletion of a local pit. MOTH's sand and crushed gravel costs have doubled since the mid to late 1980s. Kelowna prices rose over 50% in a recent three-year period as several previously-operating pits have been redeveloped into subdivisions.

The following chart demonstrates both provincial aggregate consumption and cost trends over the last 24 years. Consumption has fallen since 1989, but prices have increased sharply.

AGGREGATE PRODUCTION AND COST TRENDS



It is imperative that remaining aggregate resources in areas with decreasing supplies be managed effectively in order to maintain affordable pricing and to reduce the need for extensive long-haul trucking.[2]

It has been suggested that the Lower Mainland aggregate market could be supplied almost exclusively from pits and quarries near tidewater up the coast. Proponents point to low-cost barging as an economical means of transportation. While attractive in concept, the suggestion still requires the use of trucks from the barge unloading points. Lower mainland waterfront industrial sites are under heavy pressure from competing land uses and it is unlikely that there would be more than a handful of appropriate off loading points available. The haul distance from these points could equal or exceed the trucking from current smaller suppliers distributed throughout the market area. Furthermore, security of supply could be compromised by concentrating production in a few sites where mechanical, labour or market disruptions could constrain supply. Market problems could include competition from other market areas, such as Puget Sound or the Los Angeles Basin, where aggregate resources are also scarce. Once aggregate is loaded on an ocean-going barge or ship it may be delivered to the highest bidder at little cost.

[2]The haulage rates negotiated by Ministry of Transportation and Highways added 30% to its average 1999 cost of aggregate at a distance of eight kilometres, 50% at 19 kilometres and 70% at 30 kilometres. In many cases rates paid in the private sector can be expected to be higher.

BETTER INVENTORIES NEEDED

Managing aggregate resources requires knowledge of where those resources are located.

Inventories of non-bedrock aggregate sources have been completed for the Prince George, Central Okanagan and Nanaimo areas as a means of identifying potential production sites. The inventories in the latter two areas have been conducted in association with the regional growth strategies planning process. The inventory information can then be used to develop appropriate land use plans and zoning to permit future development of the aggregate resources. With proper planning many of the conflicts surrounding aggregate extraction sites can be avoided. Once the sites have been mined and properly reclaimed they can be re-zoned for other uses which may be more compatible with neighbouring communities.

LIMITED COMPENSATION

Local governments often complain that they receive little benefit to compensate for the costs and risks associated with noise and truck traffic from aggregate operations located within their boundaries.

Local governments often complain that they receive little benefit to compensate for the costs and risks associated with noise and truck traffic from aggregate operations located within their boundaries. Municipalities may impose soil removal fees as a volume-based levy on production, but the courts have ruled that these fees must be related to direct costs of the aggregate operation to the municipality. The only cost recognized to date is the maintenance of roads damaged by gravel truck traffic. Revenue raised by the fees can only be spent on this work. Regional district unorganized areas cannot raise fees for road maintenance because their roads are maintained by the Province. They have no control over road maintenance schedules and receive few other benefits to compensate for the often-negative impacts of aggregate production sites.

DISCUSSION

Aggregate is a non-renewable resource. Its development and use must be carefully planned to ensure long-term availability of appropriate quality material at reasonable costs and with minimal impact on the natural and social environments.

Many land use conflicts between aggregate operations and neighbouring properties could have been avoided had planners recognized long-term community needs for locally-sourced aggregate. Designating areas for aggregate extraction, as well as transportation routes to principal markets, would provide certainty to residents and operators. Residents outside designated areas would know it is unlikely that a gravel pit or quarry would be developed next door, residents and operators would know in advance where truck traffic would be routed and operators would know there is good potential for successful permit applications within designated areas.

Aggregate is generally sold and used within a regional market area, hence planning should be undertaken at a regional level. In some cases market considerations may dictate that the planning should be pursued co-operatively between two or more regional districts or within just part of a regional district.

LOCAL GOVERNMENT PLANNING

Existing legislation enables willing and co-operative communities to develop effective aggregate management plans.

The *Growth Strategies* and *Local Government Acts* currently enable interested local governments to include co-ordinated aggregate resource management planning with other planning that may be done either voluntarily or as a statutory requirement. The statutes provide comprehensive processes with opportunities for public input. They do not require local governments do aggregate resource manage-ment planning.

The *Growth Strategies* and *Local Government Acts* contain no specific guidelines with respect to aggregate resource management planning. For example, there are no requirements to incorporate the interests of the Province or adjacent jurisdictions and there is limited ability for regional districts to require member municipalities to adopt the results of their planning in their official community plans or land use zoning. Nonetheless, the existing legislation enables willing and co-operative communities to develop effective plans. The *Growth Strategies Act* also offers the ability to link aggregate resource manage-ment plans with regional transportation plans to address the impacts of aggregate truck traffic on neighbourhoods and other traffic.

While the Panel recognizes that existing legislation enables aggregate resource management planning to some extent, it sees a need to strengthen and enhance the process. The Panel believes there should be more structure for gathering appropriate resource information, dedicated financial support for the process, better links to address the interests of other affected jurisdictions and mechanisms to ensure that the plans are adopted at the local government zoning level. Furthermore, the process should acknowledge the potential for impacts of aggregate operations on communities and contemplate fair mitigation for impacts.

NEW LEGISLATION

The Panel recommends the development of new legislation, to be called the *Aggregate Resource Management Act* (*ARM Act*), to guide aggregate resource planning in the province. The Act should define the planning process, empower regional districts to use the process to plan voluntarily or at the direction of the Province, identify appropriate funding for both planning and mitigation of community impacts, and allow the Province to designate aggregate reserve zones at the local government level if necessary.

The Panel recommends the development of new legislation, to be called the *Aggregate Resource Management Act* (*ARM Act*).

The *ARM Act* should mimic many of the provisions of the *Growth Strategies Act* for co-ordinated regional planning, including provisions for public input and dispute resolution. It should enable regional districts to work co-operatively with the Province and other regional districts in a common aggregate market area to ensure that plans reflect market scale aggregate supply and demand. The *ARM Act* should permit regional districts to request designation under the Act to trigger financial assistance to develop plans on their own. Alternatively, the Act should authorize the Province, where it is in the public interest, to designate specific regional districts and require those regional districts to complete aggregate resource management planning. Once completed, plans should be regularly reviewed similar to Regional Growth Strategies. .

SEE RECOMMENDATION 1

The Province and the Union of British Columbia Municipalities (UBCM), in consultation with other stakeholders, should develop guidelines for regional district aggregate resource management planning to ensure a consistent approach throughout the province, recognizing there will be regional differences due to ranges in population density and aggregate availability. The guidelines should provide for recognition of the interests of the Province and affected communities. The planning guidelines should establish a minimum planning horizon of 30 years to ensure adequate medium-term aggregate supplies. In order for the plans to take effect, the Province should review completed aggregate resource management plans and confirm they are consistent with the guidelines.

The Province and the Union of British Columbia Municipalities (UBCM) ,should develop guidelines for regional district aggregate resource management planning

Concurrent with the development of aggregate resource management planning guidelines, the Province should develop a strong provincial aggregate policy. The Province should also undertake an overall 30 to 50 year Provincial supply and demand study as a reference for local government studies.

The Province should develop a strong provincial aggregate policy.

SEE RECOMMENDATION 3

The planning process will begin once one or more regional districts in a market area have been designated under the *ARM Act*.

SEE RECOMMENDATION 2

AGGREGATE RESOURCE MAPS

The first step should be to determine where aggregate resources are likely to be located. This inventory of resource potential must be conducted at a scale that allows fairly confident decisions regarding the potential for the existence of aggregate resources as the basis for later environmental and social impact assessments. Maps should

There should be an inventory of aggregate resource potential.

classify all areas with respect to their potential to host commercial quantities of aggregate. Possible classifications would identify aggregate potential as high, moderate or low.

Government agencies already have significant information that can be compiled towards the development of appropriate inventory maps. This information includes terrain mapping, water well logs and MOTH gravel prospecting records. Additional fieldwork would likely be required to produce maps of suitable quality and accuracy. The maps should be produced in a standard digital form that would allow layering with other resource information. Creation of aggregate resource potential inventory maps could be completed by government agencies, such as the MOTH or the Geological Survey Branch of MEM, or by specialist consultants to standards developed by the Province.

SEE RECOMMENDATION 4

ENVIRONMENTAL VALUES ASSESSMENT

Environmental issues should be identified at potential aggregate productionsites.

The second step should be identification by the Province of environmental values that could limit aggregate extraction in all of the high and moderate potential areas. Environmental values to be assessed might include fisheries habitat, groundwater use and vulnerability, community watersheds, wildlife habitat, endangered, threatened and vulnerable species, etc. These values should be evaluated objectively and classified as high, moderate or low to enable comparison between various aggregate resource potential areas.

Some of the information required for these assessments is already available in federal and provincial government offices and would only require compilation in a digital format that could be layered with other resource information. Photo interpretation and fieldwork would be required to fill in missing data and to provide sufficient confidence to support planning decisions.

Inventory information should be compiled electronically.

The assessments could be conducted by MELP staff or by specialist consultants to standards developed by the Province. A Provincial agency such as the Land Use Co-ordination Office (LUCO) could compile the aggregate resource potential inventory and environmental value assessments electronically using a geographic information system to allow the data to be viewed and analyzed efficiently. Linkages to local government geographic information systems should be maintained where possible to allow a free exchange of information.

SEE RECOMMENDATION 5

REGIONAL DISTRICTS NEED AUTHORITY

Regional districts should have authority to develop aggregate resource management plans.

Regional districts should have authority and responsibility to complete the third step of the planning process under the *ARM Act* and related guidelines in consultation with the Province, member municipalities and neighbouring jurisdictions. Regional districts would have access to all the information compiled in the steps described above. They would continue the process by identifying all

land use and social values that should influence decisions regarding aggregate extraction in the high and moderate potential areas on private land and related transportation corridors. These values would be identified and confirmed through an open public process and would be added to the growing database of resource and value locations and weightings. The completed mapping information should be made available on the Internet. BCAL should participate in the process to co-ordinate its own planning for aggregate development on Crown land.

The regional district would then, in conjunction with provincial agencies, use the values identified by all three steps to help rank potential production areas for the next 30 years. The Province would assist with forecasting 30-year demand.

This process would require agreements and compromises between adjacent regional districts, between regional districts and member municipalities and between potential producing and potential consuming areas. The *ARM Act* should include dispute resolution provisions similar to those in the *Growth Strategies Act* to allow for timely planning.

ZONING REQUIRED

Aggregate resource management planning is valueless unless it is reflected in local government official community plans and zoning.

Both regional districts and municipalities must commit to timely revision of official community plans and land use zoning bylaws to designate potential aggregate extraction areas. The aggregate resource management plan should include a schedule for zoning amendments to implement the plan.

Cases may arise where areas are identified for extraction in aggregate resource management plans but the local government does not recognize aggregate extraction in its official community plan and zoning. In this event, the *ARM Act* should provide authority for the Province to designate such areas as aggregate reserve zones where local government would be excluded from regulating aggregate extraction and processing.

SEE RECOMMENDATION 6

AMENDING THE PLAN

A public process should be required to amend the plan.

Aggregate resource management plans should provide certainty (a) for residents who would have advance knowledge of where extraction activity is most likely to take place and (b) for potential operators who would know where extraction activity is most likely to be approved. Potential operators could apply to the regional district for amendments to the aggregate resource management plan to extract aggregate from areas not identified in the plans, but there would be less certainty of obtaining amendments and subsequent zoning and permits. Similarly, local governments could seek amendments to remove areas identified for aggregate extraction in aggregate resource management plans, but any amendment would require the same type of consultation and agreements that initially created the plans.

FUNDING FOR PLANNING

A new fee or levy should be imposed to fund planning and other aggregate related expenditures.

Aggregate resource planning will impose new costs on provincial agencies and regional districts while, at the same time, conferring benefits. As significant consumers of aggregate, both levels of government should benefit from the long-term stabilization of aggregate prices resulting from better planning. In order to expedite the fieldwork, compilation, map presentation and public consultation required to complete the planning, additional funding should be provided to Provincial agencies and regional districts.

Such funding should be derived from a new revenue source so the planning costs do not displace other Provincial or local government funding initiatives. A new fee or levy should be imposed on commercial aggregate production on both Crown and private lands to fund this work and other aggregate related expenditures.

The Panel appreciates the negative perceptions a new fee may raise. However, without bold and immediate action the pit gate cost of aggregate will continue the very rapid cost increases begun in the late 1980s due, in large part, to supply restrictions. As well, in the absence of planning for local aggregate production delivery costs from more distant sources may very well rise rapidly. The Panel believes a fee on aggregate production to fund planning and mitigation activities will stabilize costs and improve community acceptance of local operations.

The fee concept has been discussed with a number of producers and with the executive of the Aggregate Producers Association of B.C. The consensus is that a volume or tonnage based fee is acceptable if it is applied equitably and no operators are competitively disadvantaged.

SEE RECOMMENDATION 7

The revenue from the fee should be held in a separately managed fund.

The Panel recommends that either the *ARM Act* should have provisions, or the *Social Services Tax Act* or other legislation should be amended, to require producers to collect an Aggregate Resource Management Fee from their customers on every tonne of aggregate sold or removed from each pit or quarry. The Fee should be submitted monthly by producers to government, either to the Ministry of Finance and Corporate Relations or to the local government which would then forward a specified portion to the Ministry of Finance and Corporate Relations, to be held in a separately managed Aggregate Fund.

The fee should be collected only in designated areas.

The legislation should permit the Province to establish the area where payment of the Fee is required, consistent with the designation of regional districts for planning under the *ARM Act*. This provision would allow immediate collection of the Fee in the designated areas, initially to finance the aggregate resource management planning process by the Province and regional districts and to identify areas where aggregate extraction may be approved in the future.

Substantial work needs to be done before the exact amount of the Fee can be established. However, the Panel considered an amount of about seventy-five cents per tonne for discussion purposes.

SEE RECOMMENDATION 8

Local governments should be prohibited by the *ARM Act* from assessing soil removal fees under their soil removal and deposit bylaws

Soil removal bylaw fees should be repealed where the new fee is applied.

once their area has been designated by the Province for the development of an aggregate resource management plan. Instead, local governments should be able to recover an amount equivalent to their existing soil removal fee from the Aggregate Resource Management Fund until the earlier of three years or the completion of their aggregate resource management plan consistent with the guidelines. The Province should be authorized to extend this three year period for specific regional districts if the planning process is delayed by factors beyond the control of the regional district. Once the plan is in place soil removal fee revenue would be replaced permanently by new payments from the Fund.

SEE RECOMMENDATION 9

Fee duplication should be avoided.

The Fee should be assessed on all commercial aggregate extraction in the designated areas. Mines taxed under the *Mineral Tax Act* for the production of minerals, as defined under the *Mineral Tenure Act*, should be exempted from paying the Fee on those same minerals. Aggregate produced as byproduct of mineral production should be subject to the Fee. All mine production should be subject to either the *Mineral Tax Act* or to the Fee.

SEE RECOMMENDATION 10

All aggregate producers in the Fee payment area should be required to measure production using a truck scale or other approved measurement device. A threshold level should be established to exempt small producers from the scale requirement if some reliable alternate means of estimating production can be found to ensure appropriate payment.

SEE RECOMMENDATION 11

The Fee should be applied equitably to all commercial producers in designated areas.

Aggregate producers have expressed concerns to the Panel that Provincial fees on aggregate production, if not applied on Indian Reserves, would give a competitive advantage to First Nations producers. The Province should investigate means to apply the Fee equitably to all commercial aggregate producers in designated areas, including First Nations, in order to maintain a fair and competitive market.

SEE RECOMMENDATION 12

LOCAL GOVERNMENT REGULATION

Aggregate operations may be regulated by the Federal, Provincial and local governments.

The current distribution of jurisdiction for the regulation of aggregate operations is confusing, with Federal, Provincial and local governments all potentially having a role. The *Federal Fisheries Act*, *Navigable Waters Protection Act*, *Canadian Environmental Assessment Act* and other statutes may apply to aggregate operations. At the provincial level, gravel pits and quarries can be subject to the *Environmental Assessment*, *Mines*, *Fish Protection*, *Waste Management*, *Highway*, *Land*, *Wildlife* and *Water* acts and many regulations and policies. Local governments, under the authority of the *Local Government Act*, may regulate or prohibit extraction of aggregate under a soil removal and deposit bylaw and may regulate land uses, buildings and structures related to aggregate operations through land use zoning bylaws. Soil removal and deposit bylaws prohibiting aggregate extraction must be approved by the Minister of Municipal Affairs with the concurrence of the Minister of Energy and Mines.

Since aggregate extraction is not considered to be a use of the land it cannot be regulated under land use zoning bylaws. Soil removal and deposit bylaws are the only direct means available to local governments for regulating the location of aggregate extraction operations. Where soil removal and deposit bylaws have not been adopted, the Ministry of Energy and Mines must currently make a decision on an application for a *Mines Act* permit for aggregate extraction without direct reference to land use issues. The Ministry cannot legally be bound by land use concerns when making its permit decisions. Because few communities have developed soil removal and deposit bylaws, many aggregate extraction operations are permitted without adequate thought being given to land use issues.

EXTRACTION AS A LAND USE

Aggregate extraction should be defined as a land use once planning and zoning are done.

To address this situation, where local governments have developed aggregate resource management plans consistent with the guidelines, extraction should be defined as a land use. This definition would ensure that the responsibility for the land use decisions rests with local governments and would assist in creating appropriate zoning to implement the plans. The *Mines Act* should be amended to restrict the issuance of permits in aggregate resource management plan areas developed consistent with the guidelines under the *ARM Act* to those places that are zoned by the regional district or member municipality for aggregate extraction. Local governments must pass or amend zoning consistent with the aggregate resource management plan. This *Mines Act* amendment would clarify that local government is the primary authority for deciding where gravel pits and quarries will be located.

SEE RECOMMENDATION 13

Once aggregate resource management plans are in place and implemented through zoning, there should be no need for soil removal and deposit bylaws for commercial aggregate operations. *Mines Act* permits would regulate activities within the mine site whose impacts extend beyond the mine site. Soil removal and deposit bylaws would still be required to regulate non-commercial aggregate extraction (for major building foundation excavations, for example) and to regulate soil deposit. Aggregate Resource Management Fees and soil removal and deposit fees should not both be assessed on the same material.

Zoning would address land use considerations. Conditions imposed under *Mines Act* permits would address health, safety and reclamation issues. Environmental issues that cannot be directly addressed under other legislation should also be addressed as conditions in the *Mines Act* permit. As discussed later in this report, there is potential for joint permits under several statutes. Current soil removal and deposit bylaw objectives that are intended to compensate for the impacts of aggregate truck traffic on local roads should be provided through other means, as discussed in the following section.

COMPENSATION TO COMMUNITIES

Communities should receive revenue for mitigation of the impacts of aggregate production and transportation.

Aggregate operations may create significant temporary landscape disturbances. They may alter wildlife habitats and viewscapes and sometimes pose risks to fish habitat and water quality. Heavy truck traffic from pits and quarries may reduce road life and create hazards for local traffic. Residents may be disturbed by noise and dust and trucks may track dirt onto public roads.

Currently the *Local Government Act* provisions for soil removal and deposit bylaws allow for volume-based fees on aggregate production. The industry has often challenged these fees. The courts have concluded that the fees can be used to address the impacts of aggregate related truck traffic on local roads. This is the only use of soil removal and deposit fees that has been successfully tested in the courts. It is not clear that communities can seek compensation for other impacts of aggregate operations through soil removal and deposit fees.

Funding should be available to local governments to address a wide range of truck traffic impacts, to enhance, protect or mitigate for degradation of fish and wildlife habitat, to address impacts on community aesthetics and manage other identifiable off-site nuisance impacts. This funding should come from production fees. Care must be taken, however, in defining how such fees may be spent in order to satisfy legal complexities. The short explanation is that fees must be "ancillary to a regulatory scheme." This means all expenditures must be directly related to aggregate issues and not flow into general revenue of either the Province or local governments.

FAIR FEE COLLECTION AND DISTRIBUTION

Local governments should receive most of the revenue.

Production Fees should be collected fairly and consistently by the Province on all commercial aggregate production in a designated area and paid into a separately managed Aggregate Fund. The majority of the Fees should flow through to local governments, commencing once they have completed an aggregate resource management plan and subsequent aggregate zoning consistent with guidelines designed to address impacts within the regional district and member municipalities.

Alternatively, the Fee could be collected by the host local governments once their plans and related zoning are completed consistent with the guidelines. In this scenario the local governments would retain an agreed-upon portion of the Fee and submit the rest to the Province for deposit to the fund and re-allocation as required. The Panel has not determined which scenario would represent the most efficient means of collecting and allocating the Fee revenue.

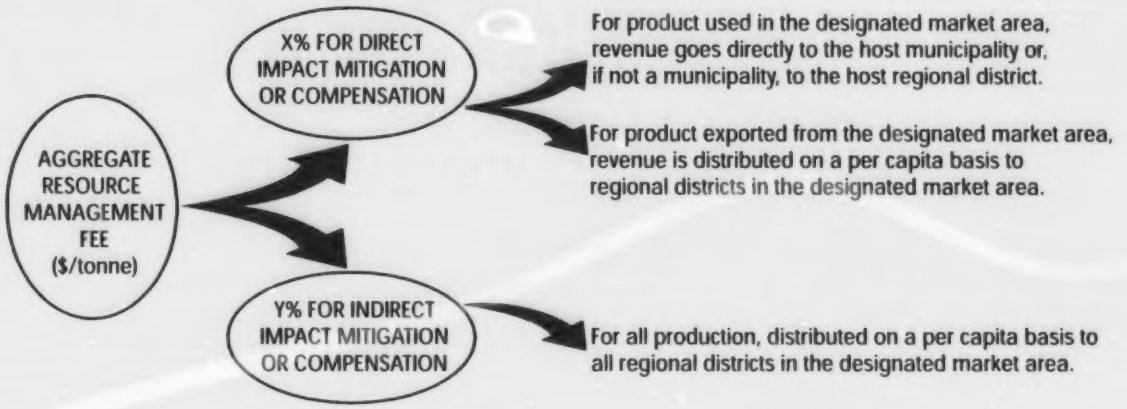
SEE RECOMMENDATION 14

Individual municipalities or regional districts that host aggregate producers should receive a fixed percentage of the Fee collected from producers within their political boundaries. This amount should not be less than that currently received by the local government under any soil removal fee. The remaining revenue to

local governments from each designated area should be distributed among all participating local governments on a per capita basis. Local governments should be required by legislation to provide annual financial statements to describe how revenues from the Fee were spent.

SEE RECOMMENDATION 15

AGGREGATE RESOURCE MANAGEMENT FEE
Distribution to Communities


AGGREGATE RESOURCE MANAGEMENT FEE ($/tonne)
X% FOR DIRECT IMPACT MITIGATION OR COMPENSATION
Y% FOR INDIRECT IMPACT MITIGATION OR COMPENSATION
For product used in the designated market area, revenue goes directly to the host municipality or, if not a municipality, to the host regional district.
For product exported from the designated market area, revenue is distributed on a per capita basis to regional districts in the designated market area.
For all production, distributed on a per capita basis to all regional districts in the designated market area.

The remainder of the Fees should be retained in the fund to support the fieldwork, studies, compilation and public consultation required to develop aggregate resource management plans, to recover collection costs and to carry out other activities consistent with aggregate resource management. The legislation that provides for the collection of the Fee should clearly state that the Fund cannot be used to support normal Provincial or local government activities and that it must be used only in support of activities ancillary to the regulatory scheme for aggregates. There should be an annual report tabled with the Legislature on the status of the Fund.

SEE RECOMMENDATION 16

MANAGING THE FUND

A new office should manage the Fund and administer new legislation.

The Aggregate Fund should be managed by an independent office attached to a ministry that does not have a role in the approval or regulation of aggregate operations. The Ministry of Finance and Corporate Relations is a potential candidate for this role. The office could be called the Aggregate Co-ordinating Office (ACO).

The ACO should administer the Aggregate Fund and related policy and legislation. It should:

- Establish standards and criteria for the planning process;
- Authorize and co-ordinate planning activities that will be financially supported by the Fund;

- Process invoices for authorized activities completed by Provincial agencies and local governments;
- Administer audits of expenditures by local governments of revenues from the Fund;
- Review, on a continuing basis, permitting issues to identify and address bottlenecks and conflicts;
- Monitor revenues and expenditures from the Fund and ensure that sufficient revenue is generated for the required planning, transfers to local governments and other approved activities;
- Recommend to Cabinet periodic fee adjustments to ensure that revenue and the long-term Fund requirements are balanced.
- Have authority to waive the requirement for truck scales at aggregate production sites where other appropriate measurement provisions are available.

SEE RECOMMENDATION 17

A co-ordinating committee with broad stakeholder representation should guide the ACO.

The ACO should be required, under its statutory authority, to create an Aggregate Co-ordinating Committee. This Committee would assist the ACO in developing standards and criteria and setting priorities for planning activities and guide the ACO in exercising its other roles and responsibilities. The Committee should have senior level representatives from the Ministries of Energy and Mines; Environment, Lands and Parks; Transportation and Highways; Municipal Affairs; and Finance and Corporate Relations as well as representatives of Fisheries and Oceans Canada, the B.C. Assets and Land Corporation, the Land Commission, the Union of B.C. Municipalities; and industry.

SEE RECOMMENDATION 18

PUBLIC AND INDUSTRY EDUCATION

The Panel found there is a generally poor understanding among members of the public concerning society's dependence on aggregate for the construction and maintenance of its physical infrastructure.

The Panel found there is a generally poor understanding among members of the public concerning society's dependence on aggregate for the construction and maintenance of its physical infrastructure. Nor do most people understand the regulatory process for aggregate operations.

There is a need for credible, neutral information on the aggregate industry available for public use. An appropriate information package should be developed to fill this need, following guidelines to be developed by the ACO.

SEE RECOMMENDATION 19

There is no organization that effectively represents the entire aggregate industry in B.C.

The Panel also found that many aggregate producers are not well versed about the potential impacts of their operations or on means to mitigate them. There is a clear need for a credible education program for the industry, too. Reaching the aggregate industry is a challenge because there is no organization that effectively represents the entire aggregate industry in B.C.

There are a number of small regional aggregate associations around the province and the nascent Aggregate Association of B.C. in the Lower Mainland tries to represent the provincial industry. The Panel recommends that the ACO support the development of a strong provincial industry association to provide a venue for education and information sharing.

A provincial aggregate industry association should have professional management, strong regional representation and a progressive approach to addressing potential environmental and social impacts of their activities. The ACO should consider financial support for the functions of a provincial aggregate association that guide association members towards reducing the social and environmental impacts of their operations. The Aggregate Fund would be an appropriate funding source.

SEE RECOMMENDATION 20

The Panel heard that exceptional industry operators receive scant recognition for their efforts. Although the Aggregate Producers Association of B.C. recognizes excellence in safety, reclamation and public involvement, the Ministry of Energy and Mines recognizes safety and the Technical and Research Committee on Reclamation recognizes excellence in reclamation, these annual awards receive very little media or public attention. The ACO should examine means of improving recognition of exceptional aggregate operations and the individuals who manage them.

MINES ACT PERMITTING PROCESS

Written submissions and public meeting presentations to the Panel often focused on individuals' dissatisfaction with the current *Mines Act* permitting process and Provincial enforcement of the resulting permits. Besides unhappiness with the inability of the *Mines Act* permitting process to deal effectively with land use issues, there was a general lack of confidence in the overall process.

There is a lack of public credibility regarding the *Mines Act* permitting process.

The Panel did not identify any single action that would lead to immediate improvement in the *Mines Act* permitting process or in the public perception of the process. There is a need for the Province to address these problems in an incremental manner. It is likely that both process and perception will improve over time as other recommendations are implemented.

The Panel found that there is no readily available written description of the current *Mines Act* permitting process for aggregate operations. There is much misinformation and distrust regarding the process, partly because it is not well understood. Development of a guide should be a priority so the public, interest groups and potential permit applicants can have a clear understanding of the permitting process.

SEE RECOMMENDATION 21

There needs to be greater emphasis on public participation in the *Mines Act* permitting process.

The Panel heard from many stakeholders that they felt excluded from the *Mines Act* permitting process. The complaints were varied, including inadequate public notice, lack of opportunity to review technical information and the lack of an avenue to publicly discuss the proposal. As a result of these concerns the Panel has concluded there needs to be greater emphasis on public participation in the *Mines Act* permitting process and more openness in the application of that process.

REGIONAL COMMITTEES

Regional committees of senior staff of all three levels of government should review permit applications.

Under the *Mines Act* Regional Mine Development Review Committees are empowered to review permit applications and make recommendations to the Chief Inspector of Mines. They normally review applications for major mines and offer a comprehensive process for reviewing all aspects of a proposed operation. The Panel recommends that the appropriate review committee should examine all applications for new *Mines Act* permits for aggregate operations and all applications for amendments to permits for such operations on both private and Crown lands.

Such committees normally include representatives of senior regional technical staff of Ministries such as Environment, Lands and Parks, Forests, Transportation and Highways, Energy and Mines, Aboriginal Affairs and others as required by the specific issues of the application being considered. Federal departments, such as Fisheries and Oceans, and potentially affected First Nations and local governments may also participate. The Panel recommends that both the host regional district and municipal governments be invited to sit on the committee for review of aggregate permit applications.

The Regional Mine Development Review Committees should be empowered to decide by consensus whether an application should be subject to review by the committee or whether it would prefer that the Ministry of Energy and Mines process the application through its conventional referral process. In these latter cases the committees could recommend to the Ministry of Energy and Mines which agencies and stakeholders should be on the referral list.

Regional Mine Development Review Committees normally review larger metal and coal mine proposals. The complexities of these reviews demand intense analysis. The Panel has concerns that applications for less technically challenging aggregate operations may not receive adequate priority from the Committees. Therefore, the Panel recommends that the Committees' terms of reference with respect to aggregate permit applications should include time frames to ensure timely review and decision.

SEE RECOMMENDATION 22

PUBLIC NOTICE AND INFORMATION

Public notice provisions should be strengthened.

The Panel heard from stakeholders that occasionally permits were granted or amended with what the stakeholders believed to be inadequate public notice. Currently it is up to the discretion of the inspector reviewing the permit application whether or not there is a requirement for public notice. The Panel believes that public notice should be a requirement under the *Health, Safety and Reclamation Code for Mines in B.C.* for every application for a new *Mines Act* permit for an aggregate operation or for a material change to an existing permit. The public notice should include a comprehensive notice, including a map, in local newspapers and a clearly legible sign posted at the location of the proposed mine site to detail the proposed activity and means for public input.

SEE RECOMMENDATION 23

Aggregate operators need certainty of permit terms.

The Panel heard from aggregate operators that they are sometimes required to operate under renewable short-term permits from the local government and the Ministry of Energy and Mines. The lack of certainty regarding recovery of investment under these circumstances is a concern for these operators and discourages them from purchasing specialized equipment or using mining methods with reduced impacts but longer paybacks.

The Panel feels that in areas zoned or designated for aggregate extraction under approved aggregate resource management plans the term of the *Mines Act* permit for an aggregate operation should generally be equivalent to the life of the mine plan. A permit amendment should not be required to proceed systematically between mine phases approved in the original mine plan providing that there are no material changes to that plan. The Chief Inspector of Mines should continue to have the authority to amend the *Mines Act* permit at any time should he/she identify an issue that is not adequately addressed in the original permit.

In areas where no aggregate resource management plan has been approved it may be appropriate in some cases for the *Mines Act* permit to be amended in order to proceed to the next phase identified in the approved mine plan. Factors to consider in this decision include the scope of the operation and the potential for social and environmental impacts.

SEE RECOMMENDATION 24

Public meetings should be required in most cases.

Public information meetings should be required for all applications for significant new *Mines Act* permits for aggregate operations and for all material amendments to existing permits. The Chief Inspector of Mines, in consultation with the Aggregate Co-ordinating Committee, should develop guidelines for determining what constitutes a significant application and a material amendment. Applicants should manage these public information meetings following guidelines prepared by the Ministry of Energy and Mines in consultation with the regional mine development review committees. The guidelines should stipulate requirements for advertising, the provision of a neutral chairperson, information to be available before and during the meeting and other provisions that the Ministry feels are important for an open, fair and productive meeting.

SEE RECOMMENDATION 25

Application information should be available on a website.

To further improve public access to information on *Mines Act* permit applications, the Panel recommends that the ACO establish a website. The website would list applications, provide a synopsis of each proposed operation and identify the agencies asked to comment on each application. In addition, the website would provide links to other agencies with approval authority for aspects of the proposed operation.

The website would also give notice of information meetings for particular applications as well as providing detailed technical information that agencies reviewed as part of the application process. Giving the public the opportunity to review technical information before the information meeting should produce more meaningful discussion. Technical information should be made available locally at Government Agent or regional district offices for people without Internet access.

SEE RECOMMENDATION 26

JOINT PERMITS

Several submissions to the Panel discussed the discretion given to the Chief Inspector of Mines to attach conditions to *Mines Act* permits. Some people felt the Ministry of Environment, Lands and Parks along with Fisheries and Oceans Canada should decide the environmental conditions to be included in a *Mines Act* permit and that the Chief Inspector should be bound by their recommendations. Others felt that other Provincial and local government agencies should have veto power over *Mines Act* permits.

Joint permits could help coordinate agency process.

The Panel does not recommend a veto for other agencies. However, it recommends that the Province investigate whether a single permit can serve to integrate the approvals required under more than one provincial statute. For example, permits for aggregate extraction and processing should include requirements to satisfy the *Water Act*, the *Waste Management Act* and the *Mines Act*. The pertinent sections of such a permit relative to each statute would likely require separate approval by an appropriate statutory decision-maker, meaning that two or more signatures may be required.

The advantages of a joint aggregate extraction and processing permit would be that the requirements of Provincial agencies could be integrated in a single operating authorization, ensuring co-ordination during and after the permitting process. The permit could be enforced by the respective agencies responsible for each section.

SEE RECOMMENDATION 27

There is another way to ensure that the concerns of other Provincial agencies are addressed during the *Mines Act* permitting process. This would be to require the *Mines Act* decision maker to prepare written reasons when the recommendations of other agencies are not included as *Mines Act* permit conditions. This approach recognizes that some recommendations may have to be omitted due to mandate limitations or because they conflict with the recommendations of other agencies. The reasons for decision should be publicly available at the time the permit is issued.

SEE RECOMMENDATION 28

RECLAMATION SECURITIES

Security is required to ensure appropriate reclamation.

Several individuals recommended to the Panel that *Mines Act* permits for gravel pits and quarries should include conditions to protect the environment and that securities should be required to ensure reclamation. These concerns probably arise because the *Mines Act* does not specifically require the inclusion of conditions or security; both are imposed at the discretion of the Chief Inspector of Mines.

The Panel determined that by Ministry policy all *Mines Act* aggregate permits include environmental conditions and that most permits also include site specific provisions developed by the Inspector of Mines or recommended by other agencies to address local environmental conditions. The Panel also found that virtually all permits require the posting of securities to ensure reclamation. Exceptions to the requirement for security include some sites in the Agricultural Land Reserve, where the Land Commission holds

equivalent or superior security to that which the Ministry of Energy and Mines would require, and sites operated by local governments. Because aggregate operations may exist for many years and because reclamation costs may change over time, the Panel recommends that the reclamation security amounts held for *Mines Act* permits be reviewed periodically to ensure they accurately reflect the reclamation liabilities at each mine site.

SEE RECOMMENDATION 29

BEST MANAGEMENT PRACTICES

Operators, governments and the public would benefit from having clear best management practices.

The Ministry of Energy and Mines advised the Panel that Ministry staff and a steering committee representing federal and provincial agencies, local governments and the aggregate industry is developing a best management practices hand book for the aggregate industry. The Panel commends this initiative and feels that it will greatly assist operators, local governments and the general public in understanding the potential environmental and social impacts of aggregate extraction and processing and in defining a range of options to address these impacts. The manual should be completed and distributed expeditiously.

SEE RECOMMENDATION 30

SOCIAL AND ENVIRONMENTAL GUIDELINES

Guidelines and standards can assist decision-makers and stakeholders.

The Panel believes that clear guidelines and standards to limit social and environmental impacts of aggregate operations are necessary for public confidence in the regulation of the operations. Guidelines should be developed in consultation with outside experts and with provision for public input. Such guidelines would assist decision-makers in issuing permits and establishing appropriate conditions. They would also assist the public in understanding the rationale for permit conditions and could be used for the basis of appeal decisions.

Examples of areas where guidelines and standards should be considered include discharges to air and water, impacts on groundwater, noise limits at the property boundary and reclamation slope angles. Consideration should be given as to whether new guidelines should be applied to existing operations and, if so, whether a transition period should be established.

SEE RECOMMENDATION 31

MINES ACT PROVISIONS FOR AGGREGATE OPERATIONS

Appeal Provisions

Appeal provisions, common and other statutes, should be included in the *Mines Act*.

The Panel heard several complaints that there is no provision in the *Mines Act* for an appeal of a permit decision or order made by the Chief Inspector of Mines or by a person delegated permitting authority by the Chief Inspector. It is common practice in many other statutes, including the *Water Act*, *Waste Management Act* and *Forest Act*, to include appeal provisions for decisions. Although a *Mines Act*

permit cannot be appealed, some of the potential impacts of permitted activities at gravel pits and quarries, such as discharges to air and water, are currently regulated under these other statutes that do have appeal provisions.

The Panel feels that an appeal provision for permits and orders relating to aggregate operations would be appropriate for situations not addressed by existing appeal provisions under other statutes. There are a number of options for such an appeal provision. They include: referral to the Environmental Appeal Board (EAB) or other existing appeal body, creation of a new appeal process specific to aggregate permits and orders under the *Mines Act* or conferring permitting authority directly to inspectors under the *Mines Act* to allow appeals of their decisions to the Chief Inspector. This latter option may not be viewed as being sufficiently independent to ensure a credible process for the review of environmental or social issues.

Any appeal process should be seen to be fair and timely by all stakeholders.

Any appeal process should be seen to be fair and timely by all stakeholders. It should have a clearly-defined time frame for filing appeals after a permit or order is issued, for holding a hearing after the appeal is filed, and for delivering a decision once the hearing is completed. The Environmental Appeal Board is viewed as a credible and fair appeal process. The Panel recommends that the enabling legislation for the Environmental Appeal Board be amended to define maximum time periods between (a) the filing of an appeal and initiation of a hearing by the Board and (b) the completion of a hearing and the delivery of a written decision. This would improve perceptions of timeliness.

The *Mines Act* should be amended to enable appeal of permits and prescribed orders for aggregate operations to the Environmental Appeal Board. The amendment should define which specific permitting issues should be subject to appeal in permits and what types of orders may be appealed. Orders relating to mine health and safety concerns should not be appealed to the EAB. An amendment to the *Mines Act* should also define a maximum time period between the issuance of a permit or order and the filing of an appeal. *Mines Act* decisions should not be appealed to the EAB until the legislation has been amended.

SEE RECOMMENDATION 32

Regional managers should have statutory authority to issue permits for aggregate operations.

While investigating appeal options the Panel considered the process wherein the Chief Inspector of Mines delegates authority for issuing *Mines Act* permits to other inspectors of mines. The Panel concluded it would be more efficient for the *Mines Act* to assign issuing and amending authority of aggregate operation permits directly to Ministry of Energy and Mines Regional Managers in addition to the Chief Inspector of Mines. However, it may be appropriate for the *Mines Act* to reserve this authority to the Chief Inspector of Mines for applications subject to review under the *Environmental Assessment Act*. The Chief Inspector should be able to reserve for his own determination applications for aggregate operation permits if he feels they raise issues of significant public concern.

The Chief Inspector of Mines should develop a policy directive in consultation with the ACO's co-ordinating committee to define where he/she should have exclusive and discretionary authority for issuing permits for aggregate operations.

SEE RECOMMENDATION 33

Special Provisions for Aggregate Mines

The *Mines Act* and *Health, Safety and Reclamation Code* should be reviewed with respect to their application to aggregate operations.

Several aggregate operators complained at the Panel's public meetings that they were subject to the same regulations as major metal and coal mines. They felt this was unfair because they did not pose the same risks as major mines. The Panel recognizes that some of the provisions of the *Mines Act* and the *Health, Safety and Reclamation Code for Mines in B.C.* may not be appropriate for small pits and quarries.

Section 27 of the *Mines Act*, for example, may not be appropriate for aggregate operations. This section requires that every mine have accurate mine plans, updated every three months, kept in an office at the mine site. There is no provision to exempt a mine from this requirement. A large percentage of the gravel pits and quarries in B.C. do not have a building on site in which to keep plans. Furthermore, many of these pits and quarries are operated intermittently and may be inactive for months or even years. It makes no sense to update mine plans when there is no change or to construct a building solely for the purpose of keeping plans.

SEE RECOMMENDATION 34

The Panel heard numerous requests from the industry and others for a separate Code or for a separate chapter of the existing *Health, Safety and Reclamation Code (HSR Code)* for aggregate operations. The *HSR Code* was amended in 1997 to include a new Part 12 that deals with the application of the *HSR Code* to gravel pits, the requirement for occupational health and safety committees, and provisions for visual rather than audible backup alarms on mobile equipment.

The Panel recommends that the Ministry of Energy and Mines seriously consider a more substantial Part 12 of the *HSR Code* to address problems specific to the aggregate industry and to simplify the application of the *HSR Code* to this sector of the mining industry. Alternatively, the Ministry could publish a synopsis of the *HSR Code* specifically for the aggregate industry or create a wholly separate Code. Whatever option is selected it should define any permitting process provisions specific to the aggregate industry. This approach would serve to give the public more confidence in the process.

SEE RECOMMENDATION 35

Enforcement

The Panel heard from stakeholders who thought that the Ministry of Energy and Mines does not adequately enforce the *Mines Act* and related permits. This perception may have several causes: the limited resources that the Ministry of Energy and Mines can dedicate to aggregate operations at any particular time, the discretionary nature of enforcement, the fact that inspectors' orders are not publicized, the Ministry's preference to make orders and negotiate solutions rather than take court action, and the lack of authority in the *Mines Act* to issue monetary penalties.

The Panel recommends that the *Mines Act* be amended to add the authority to issue monetary penalties, consistent with other Provincial legislation such as the *Forest Practices Code Act*.

SEE RECOMMENDATION 36

SECONDARY ACTIVITIES AT PITS AND QUARRIES

Primary processing is an integral part of aggregate operations.

Aggregate extraction sites often host other related and unrelated land uses and activities. Most common is aggregate processing -- the screening, crushing and washing of primary aggregate materials to create higher value products. Few gravel pits are viable if limited to producing unprocessed material, commonly known as "pit run."

Crushing makes use of oversize materials and creates angular materials required under some engineering specifications. Crushing may be an integral part of the day to day operation of the mine or it may be done periodically using a portable crusher brought in by a contractor. Crushers are usually a significant source of noise at gravel pits and quarries and require careful siting to minimize impacts on surrounding land uses.

Screening produces specific size gradations required by the aggregate market. Washing removes fine sediment such as silt and clay that is detrimental for some applications.

Aggregate processing should be considered as part of the overall aggregate extraction process. Local government zoning for aggregate operations should include approval of processing. It is not reasonable to separate the consideration of the processing from the extraction since they are integral parts of the same operation.

SEE RECOMMENDATION 37

Operators argue that other value-added activities, such as asphalt and concrete plants, should be considered as integral to the extraction site as well. This argument certainly makes sense from an economic perspective. There are significant cost savings to the manufacturer of asphalt and concrete if the required aggregate can be produced on site. However, these activities are not regulated under the *Mines Act* and are subject to local government regulation through land use zoning bylaws. The Panel encourages local governments to consider approving value-added activities at permitted aggregate extraction operations where they can be regulated in a manner that minimizes unwanted impacts on surrounding land uses.

SEE RECOMMENDATION 38

RECYCLING OF AGGREGATE

Recycling can reduce aggregate demand and extend the life of existing resources.

Aggregate is a non-renewable resource, but much of it can be recycled. In-place recycling of asphaltic concrete is becoming commonplace. Using this process the top surface of an existing asphalt road surface is ground down using huge grinders. The ground up material is mixed with fresh aggregate and new asphalt emulsion and laid down on the road again to produce a high quality driving surface.

Concrete is also recycled. Broken concrete from construction sites is often crushed and the resulting aggregate separated from any reinforcing steel and used for low specification applications such as road fill. The recycling may take place at the construction site with portable crushing equipment or at a central depot.

The Panel has learned that recycling accounts for about 8% of the B.C. aggregate supply. With better management programs and incentives this volume could be increased. However, recycling will not

completely replace demand for new aggregate. Recycling often results in higher cost aggregates and there are significant challenges in meeting higher end product specifications. The Panel recommends exempting recycled aggregate from payment of aggregate production fees as an incentive for expanded use. Communities and the Province should consider other incentives for recycled aggregate in order to manage long term demand.

SEE RECOMMENDATION 39

CROWN LAND

Aggregate on Crown Land is a provincial resource.

Aggregate on Crown land is a provincial resource managed by the B.C. Assets and Land Corporation (BCAL) on behalf of the Ministry of Environment, Lands and Parks for the people of the province. Persons wishing to extract aggregate from Crown land for commercial use must apply to BCAL for a tenure. Several forms of tenure are available under the *Land Act*. The tenure agreement will usually require that the applicant pay property taxes, an annual rental fee and a royalty on the material produced. Royalty rates are established at the regional level and are calculated to reflect market rates.

Some aspects of the administration of Crown aggregate should be reviewed.

The Panel received several comments from stakeholders regarding royalty rates for aggregate production from Crown lands. Several operators suggested that the royalties and related costs of holding Crown land exceeded the market value of produced aggregate in their geographic areas. BCAL advises that its pricing is based on the principle of fair market value and that it attempts to set royalty rates for commercial operators that reflect private market rates. The Panel did not have the resources to investigate royalties further, but recommends that BCAL review the royalty structure and policy on a regional basis to ensure that Crown aggregate is available at reasonable cost where it is needed. It is possible that lower royalty rates in some areas of the Province may actually result in higher revenues to the Crown because of the greater volumes of Crown aggregate that may be produced. It should always be borne in mind, however, that Crown resources must be managed for long-term public benefit.

SEE RECOMMENDATION 40

Some stakeholders also argue the current *Land Act* provisions that prohibit selling Crown land outright for aggregate extraction discourages the development of the highest and best end land use. Where the producer does not own the land on which a pit or quarry is located there is little incentive to mine the land in a manner that increases the end value above the minimum requirements of their reclamation plan. BCAL should consider whether continuation of this policy is in the best interests of the Province.

SEE RECOMMENDATION 41

Where aggregate operators use Crown land they often find that the duration of the Crown land tenure (licence of occupation, lease, etc.) is less than the life of the mine. This situation creates operational problems because the operators can never assume they will be allowed to complete the proposed mining. They must therefore plan mining so that they can readily fulfill their reclamation obligations at the site if the tenure is not renewed, rather than plan for efficient and safe extraction of the full resource. The Panel recommends that BCAL

work with the Ministry of Energy and Mines to co-ordinate tenure term and mine life to promote more efficient resource extraction. BCAL should also work with local governments to determine future land uses consistent with local land use planning processes.

SEE RECOMMENDATION 42

MINISTRY OF TRANSPORTATION AND HIGHWAYS

MOTH is a major consumer of aggregate.

Most of the aggregate produced in the province is eventually used for public purposes, whether it is for road construction, utilities upgrades or flood protection. Much of that production comes from government owned or operated pits and quarries. Provincial agencies, particularly the Ministry of Transportation and Highways (MOTH) and regional and municipal governments may all own and operate pits and quarries. In 1999 MOTH used almost eight million tonnes of aggregate.

The Panel recommends that MOTH aggregate operations, where the product is used solely by MOTH or its agents for the construction and maintenance of public highways amenities, should be exempt from aggregate production fees. The rationale for this position is that the people of the province all benefit from these amenities and the imposition of fees would result in a reduction of annual construction and maintenance activities. Any production from MOTH aggregate operations sold commercially or used by MOTH contractors for non-MOTH work should be subject to aggregate production fees.

SEE RECOMMENDATION 43

Aggregate purchased commercially by MOTH contractors should be subject to the Fee.

Contractors employed by MOTH to construct and maintain highways should pay the Fee on all aggregate production that does not come from pits and quarries owned by MOTH. Local governments should receive Aggregate Fund payments with respect to this production, but not for production from Ministry of Transportation and Highways' own aggregate operations.

SEE RECOMMENDATION 44

MOTH and BCAL should develop a policy and process for timely decisions for MOTH access to aggregate on Crown Land.

Most new aggregate operations required by the Ministry of Transportation and Highways are located on Crown land and require reserves under the *Land Act* from the BCAL. Ministry of Transportation and Highways staff have complained that the process for obtaining these reserves is often time consuming and uncertain. Often the delays are due to the need to balance aggregate extraction with a variety of natural resource interests such as forest values and potential heritage sites and the fact that there is no clear or timely process to deal with this situation. The Panel recommends that BCAL and MOTH jointly develop acceptable process and policy guidelines for making decisions regarding the balancing of resource interests.

SEE RECOMMENDATION 45

AGGREGATE EXPORT

B.C.is an exporter of aggregate.

The Panel heard several concerns that B.C. is allowing the export of aggregate when some communities in the province suffer from shortages. Aggregate is essentially a non-renewable resource and some citizens are concerned that we should be conserving the resource for our own future internal use.

The Panel briefly investigated this situation and concluded that any prohibition on export would likely be subject to constraints under the General Agreement on Trade and Tariffs (GAAT) and the North American Free Trade Agreement (NAFTA).

EXTRACTION FROM AGRICULTURAL AND FOREST LAND RESERVES

Aggregate may be extracted from the Agricultural and Forest Land Reserves.

Agriculture and forestry activities have high priority on the provincial land base. They are seen as sustainable activities that provide essential food, jobs and exports. In order to protect lands for these activities the Province created the Agricultural and Forest Land Reserves that include both Crown and private lands. Non-agricultural and non-forestry activities are restricted in the Agricultural and Forest Land Reserves, respectively, and are regulated by the Land Reserve Commission.

Commission staff explained that the Commission is not opposed to aggregate production as a temporary land use and pointed out that 95% of the applications received in the last eight years for extraction activities in the Agricultural Land Reserve were approved. Numbers were not available for the Forest Land Reserve.

The Panel heard from industry sources that they considered that the Land Reserve Commission is too restrictive in the protection of the reserve lands. These sources argued that the production of aggregate is a temporary land use and that the land can be returned to agricultural or forestry uses upon the completion of mining. They further argued that in many cases the highest and best use of some Reserve lands is mining.

Land Reserve Commission policies for aggregate extraction from the Forest Land Reserve should be reviewed.

The Panel recommends that the Land Reserve Commission consider developing specific policy to permit the use of Forest Reserve lands for aggregate production in areas where supply may be limited. For example where extensive urban development precludes aggregate extraction, Forest Reserve lands on the urban fringe become attractive aggregate sources. There is a need to balance protection of forest capability with local demands for affordable aggregate. Site specific standards for reclamation, backed by appropriate securities, can ensure that the land is restored for forest use. Alternatively, the Commission should consider broader criteria for releasing land from the Forest Land Reserve where local aggregate demand is high.

SEE RECOMMENDATION 46

Although there was no consensus on this issue, some individuals thought that the standards for returning the land to agricultural or forestry productivity are too stringent and that the financial securities required to ensure compliance are too high. The Panel did not have the time to investigate the standards or the specifics of security requirements, but recommends that the Land Reserve Commission review its requirements from time to time to ensure that they remain appropriate.

SEE RECOMMENDATION 47

RECOMMENDATIONS

The Aggregate Advisory Panel makes the following recommendations.

LOCAL GOVERNMENT PLANNING

RECOMMENDATION 1
SEE PAGE 12

The government should develop new legislation, to be called the *Aggregate Resource Management Act (ARM Act)*, to guide aggregate resource planning. The Act should:

- Mimic provisions of the *Growth Strategies Act* for co-ordinated regional planning, including those for public input and dispute resolution;
- Enable regional districts to work co-operatively with the Province and other regional districts within a common aggregate market area to develop aggregate resource management plans that reflect market scale aggregate supply and demand;
- Permit regional districts to request designation under the Act to trigger financial assistance to develop plans on their own;
- As an alternative, authorize the Province to require designated regional districts to complete aggregate resource management planning.
- Identify appropriate funding for both planning for aggregate production and mitigation of community impacts;
- Allow the Province to designate aggregate reserve zones where local governments would be excluded from regulating aggregate operations, if necessary.
- Require regular reviews of completed plans similar to Regional Growth Strategies.

RECOMMENDATION 2
SEE PAGE 12

The Province together with the Union of British Columbia Municipalities should, in consultation with other stakeholders, develop guidelines for regional district aggregate resource management planning to ensure a consistent approach throughout the province. Regional differences due to population density and aggregate availability should be recognized. The guidelines should provide for the recognition of the interests of the Province and affected communities. The planning guidelines should establish a minimum planning horizon of 30 years to ensure adequate medium-term aggregate supplies. In order for the plans to take effect, the Province should review completed aggregate resource management plans and confirm they are consistent with the guidelines.

RECOMMENDATION 3
SEE PAGE 12

Concurrent with the development of aggregate resource management planning guidelines, the Province should develop a strong provincial aggregate policy. It should commission an overall 30 to 50 year Provincial supply and demand study as a reference for local government studies.

AGGREGATE RESOURCE MAPS

RECOMMENDATION 4
SEE PAGE 13

The Provincial government should conduct an inventory of aggregate resource potential. Maps should classify all areas with respect to their potential to host commercial quantities of aggregate. The maps should be produced in a standard digital form that allows layering with other resource information.

ENVIRONMENTAL VALUES ASSESSMENT

RECOMMENDATION 5
SEE PAGE 13

The Provincial government should identify environmental values that would limit aggregate extraction in all of the high and moderate potential areas. Environmental values to be assessed might include fisheries habitat, groundwater use and vulnerability, community watersheds, wildlife habitat, endangered, threatened and vulnerable species, etc. These values should be evaluated objectively and classified as high, moderate or low to enable comparison between various aggregate resource potential areas.

LOCAL GOVERNMENT PLANNING

RECOMMENDATION 6
SEE PAGE 14

The ARM Act should give regional districts the authority and responsibility for identifying land use and social values that should influence decisions regarding aggregate extraction in all of the high and moderate potential areas and related potential transportation corridors. These values would be identified and confirmed through an open public process. The regional districts should exercise this authority in consultation with the Province, member municipalities and neighbouring jurisdictions.

RECOMMENDATION 7
SEE PAGE 15

The government should impose a new volume or tonnage-based Aggregate Resource Management Fee (the Fee) on production to fund planning and mitigation of the impacts of aggregate operations on communities.

RECOMMENDATION 8
SEE PAGE 15

The Province should ensure that the *ARM Act* has provisions, or the *Social Services Tax Act* or other legislation should be amended, to require producers to collect an Aggregate Resource Management Fee from their customers on every tonne of aggregate sold or removed from each pit or quarry. The Fee should be submitted monthly by producers to government, either to the Ministry of Finance and Corporate Relations or to the local government which would then forward a specified portion to the Ministry of Finance and Corporate Relations, to be held in a separately-managed Aggregate Fund.

The legislation should permit the Province to establish the area where payment of the Fee is required, consistent with the designation of regional districts for planning under the *ARM Act*. This provision

would allow immediate collection of the Fee in the designated areas, initially to finance the aggregate resource management planning process by the Province and regional districts and to identify areas where aggregate extraction may be approved in the future.

RECOMMENDATION 9
SEE PAGE 16

Local governments should be prohibited under the *ARM Act* from assessing removal fees for commercial aggregate operations under soil removal and deposit bylaws once their area has been designated by the Province for the development of an Aggregate Resource Management Plan. Instead, local governments should recover an amount equivalent to their existing soil removal fee from the Aggregate Resource Management Fund. This provision should remain in force for three years or until the approval of their Aggregate Resource Management Plan, whichever is earlier. Revenue to the local government should cease after three years if no plan has been signed off by the Province. The Province may extend this time period. Once the plan is in place the soil removal fee revenue should be replaced permanently by new payments from the Fund.

RECOMMENDATION 10
SEE PAGE 16

The Fee should be assessed on all commercial aggregate extraction in the designated areas. Mines taxed under the *Mineral Tax Act* for the production of minerals, as defined under the *Mineral Tenure Act*, should be exempt from payment of the Fee on those same minerals. Aggregate produced as byproduct of mineral production should be subject to the Fee. All mine production should be subject to either the *Mineral Tax Act* or to the Fee.

RECOMMENDATION 11
SEE PAGE 16

All aggregate producers in the Fee payment area should be required to measure production using a truck scale or other approved device. A threshold level should be established to exempt small producers from the scale requirement if some reliable alternate means of estimating production can be found to ensure appropriate payment.

RECOMMENDATION 12
SEE PAGE 16

The Provincial government should investigate means to apply the Fee equitably to all commercial aggregate producers in designated areas, including First Nations, in order to maintain a fair and competitive market.

LOCAL GOVERNMENT REGULATION

RECOMMENDATION 13
SEE PAGE 17

The Province should amend the *Mines Act* to restrict the issuance of permits in approved Aggregate Resource Management Plan areas, developed under the *ARM Act*, to those places zoned by the regional district or member municipality for aggregate extraction. Local governments must pass zoning consistent with Aggregate Resource Management Plans.

COMPENSATION TO COMMUNITIES

RECOMMENDATION 14
SEE PAGE 18

The Panel recommends the government consider two alternate methods of collecting and distributing the Aggregate Resource Management Fees. ***Option A:*** Under this option the Province would collect the Fee on commercial aggregate production in a designated area and pay it into a separately managed Aggregate Fund. The majority of these Fees would flow through to local governments on completion of approved Aggregate Resource Management Plans and subsequent aggregate zoning. ***Option B:*** Under this second method the host local governments would collect the Fees once their plans are approved and related zoning completed. In this scenario local governments would retain an agreed-upon portion of the Fee and submit the balance to the Province for re-allocation as required. The Panel has not determined which scenario would be most efficient.

RECOMMENDATION 15
SEE PAGE 19

Individual municipalities or regional districts that host aggregate producers should receive a fixed percentage of the Fee collected from producers within their political boundaries. In addition to this fixed percentage, participating regional districts should receive a further percentage of the Fee revenue from their respective designated areas, allocated between regional districts on a per capita basis. Local governments should be required by legislation to provide annual financial statements to describe how revenues from the Fee were spent.

RECOMMENDATION 16
SEE PAGE 19

Fees remaining in the Fund after the payments have been made to local governments (as recommended above) should be used to support the fieldwork, studies, compilation and public consultation required to develop Aggregate Resource Management Plans and recover collection costs. Public and industry education initiatives and other defined costs may also be supported. There should be an annual report to the Legislature on the status of the fund.

RECOMMENDATION 17
SEE PAGE 20

The Aggregate Fund should be managed by an independent office attached to a ministry not involved in the approval or regulation of aggregate operations. The Ministry of Finance and Corporate Relations is a potential candidate for this role. The office could be called the Aggregate Co-ordinating Office (ACO) and would be financed from the Aggregate Fund.

The ACO should administer the Aggregate Fund and related policy and legislation. It should:

- Establish standards and criteria for the planning process;
- Authorize and co-ordinate planning activities financially supported by the Fund;
- Process invoices or approve expenditures for authorized activities completed by Provincial agencies and local governments;

- Administer random audits of expenditures by local governments of Fund revenues;
- Review, on a continuing basis, permitting issues to identify and address bottlenecks and conflicts;
- Authorize expenditures from the Fund on public and industry education initiatives related to long-term aggregate resource management;
- Monitor revenues and expenditures from the Fund and ensure that sufficient revenue is generated for the required planning;
- Recommend to Cabinet periodic Fee adjustments to ensure that revenue and the long-term Fund requirements are balanced;
- Have authority to waive the requirement for truck scales at aggregate production sites where other appropriate measurement provisions are available.

RECOMMENDATION 18
SEE PAGE 20

The ACO should be required, under its statutory authority, to create an Aggregate Co-ordinating Committee. This Committee would assist the ACO in developing standards and criteria and setting priorities for planning activities and guide the ACO in exercising its other roles and responsibilities. The Committee should have senior level representatives from the following ministries: Energy and Mines; Environment, Lands and Parks; Transportation and Highways; Municipal Affairs; and Finance and Corporate Relations as well as representatives of Fisheries and Oceans Canada; the B.C. Assets and Land Corporation; the Land Commission; the Union of B.C. Municipalities; and industry.

PUBLIC AND INDUSTRY EDUCATION

RECOMMENDATION 19
SEE PAGE 20

An information package should be prepared to enhance public awareness of society's dependence on aggregate for the construction and maintenance of physical infrastructure as well as the regulatory process involved. The ACO should develop guidelines for this information package.

RECOMMENDATION 20
SEE PAGE 21

The ACO should support the development of a strong provincial aggregate industry association which, through education and information sharing, would help members reduce the social and environmental impacts of their operations. The Aggregate Fund would be an appropriate funding source for some of the educational and information-sharing functions of the association.

MINES ACT PERMITTING PROCESS

RECOMMENDATION 21
SEE PAGE 21

The government should, as a priority, develop a written guide so that the public, interest groups and potential permit applicants can have a clear understanding of the *Mines Act* permitting process.

RECOMMENDATION 22
SEE PAGE 22

Regional Mine Development Review Committees should:

- Examine all applications for new *Mines Act* permits for aggregate operations and all applications for amendments to permits for such operations;
- Invite both the host regional district and municipal governments to sit on the Committee for review of aggregate permit applications;
- Be empowered to decide by consensus whether the Committees themselves, or the Ministry of Energy and Mines, through its normal process, should review permit applications. (In these latter cases the Committees could recommend to the Ministry the agencies and stakeholders to be consulted);
- Have specific time frames for the review of aggregate permit applications.

RECOMMENDATION 23
SEE PAGE 22

Whenever application is made for a new *Mines Act* permit for an aggregate operation, or for a material change to an existing permit, public notice should be required under the *Health, Safety and Reclamation Code for Mines in B.C.* A comprehensive notice, including a map, should be published in local newspapers and a clearly legible sign should be posted at the proposed mine site to detail the proposed activity and means for public input.

RECOMMENDATION 24
SEE PAGE 23

In areas zoned, or designated for aggregate extraction under approved aggregate resource management plans, the term of the *Mines Act* permit for an aggregate operation should generally be equivalent to the life of the mine plan. A permit amendment should not be required to proceed systematically between mine phases approved in the original mine plan providing that there are no material changes to that plan. The Chief Inspector of Mines should continue to have the authority to amend the *Mines Act* permit at any time if he/she identifies an issue that is not adequately addressed in the original permit. In areas where no aggregate resource management plan has been approved it may be appropriate in some cases for the *Mines Act* permit to be amended in order to proceed to the next phase identified in the approved mine plan. Factors to consider in this decision include the scope of the operation and the potential for social and environmental impacts.

RECOMMENDATION 25
SEE PAGE 23

Public information meetings should be required for all applications for significant new *Mines Act* permits for aggregate operations and for all material amendments to existing permits. Guidelines should be developed to define what is significant or material. Applicants should manage public information meetings following Provincial guidelines stipulating such things as advertising, the provision of a neutral chairperson and information to be available before and during the meeting.

RECOMMENDATION 26
SEE PAGE 23

The ACO should establish a website to further improve public access to information on *Mines Act* permit applications. The website should list applications, provide a synopsis of each proposed operation, and identify the agencies asked to comment on each application. In addition, the website should provide links to other agencies with approval authority for aspects of the proposed operation.

The website should also give notice of information meetings for particular applications as well as providing detailed technical information that agencies reviewed as part of the application process.

RECOMMENDATION 27
SEE PAGE 24

The government should investigate whether a single permit can serve to integrate the approvals required under more than one provincial statute. (For example, permits for aggregate extraction and processing could include requirements to satisfy the *Water Act*, the *Waste Management Act* and the *Mines Act*.)

RECOMMENDATION 28
SEE PAGE 24

As an alternative to Recommendation 27 the *Mines Act* decision maker could be required to prepare written reasons when the recommendations of other agencies are not included as *Mines Act* permit conditions. This approach recognizes that some recommendations may have to be omitted due to mandate limitations or because they conflict with the recommendations of other agencies. The reasons for decision should be publicized at the time the permit is issued.

RECOMMENDATION 29
SEE PAGE 25

The amount of security required to pay for reclamation under *Mines Act* permits should be reviewed periodically to ensure they accurately reflect the liabilities at each mine site.

RECOMMENDATION 30
SEE PAGE 25

The Panel commends the initiative of a steering committee comprising Ministry of Energy and Mines staff, federal and provincial agencies, local governments and the aggregate industry in developing a best management practices hand book for the aggregate industry. The manual should be completed and distributed without delay.

RECOMMENDATION 31
SEE PAGE 25

The Province should develop guidelines and standards to limit social and environmental impacts of aggregate operations in consultation with outside experts. There should be provision for public input. Examples of areas where guidelines or standards should be considered include discharges to air and water, impacts on groundwater, noise limits at the property boundary and reclamation slope angles. Consideration should be given as to whether new guidelines should be applied to existing operations and, if so, whether a transition period should be established.

MINES ACT PROVISIONS FOR AGGREGATE OPERATIONS

RECOMMENDATION 32
SEE PAGE 26

The *Mines Act* should be amended to enable appeal of permits and prescribed orders for aggregate operations to the Environmental Appeal Board. The amendment should define which specific permitting issues should be subject to appeal in permits and what types of orders may be appealed. A *Mines Act* amendment should also specify the maximum time that may elapse between the issuance of a permit or order and the filing of an appeal.

RECOMMENDATION 33
SEE PAGE 26

The Ministry of Energy and Mines regional managers, in addition to the Chief Inspector of Mines, should be given authority under the *Mines Act* to issue permits for aggregate operations, subject to the limitations described in Recommendation 13. The Chief Inspector should be able to reserve for his own determination permit applications he feels raise issues of significant public concern. The Chief Inspector of Mines should develop a policy directive in consultation with the ACO's co-ordinating committee to define where the Chief Inspector should have exclusive and discretionary authority to issue permits for aggregate operations.

RECOMMENDATION 34
SEE PAGE 27

The government should consider exempting aggregate operators from some of the provisions of the *Mines Act* and the *Health, Safety and Reclamation Code for Mines in B.C.* (the *HSR Code*) that are inappropriate for small pits and quarries.

RECOMMENDATION 35
SEE PAGE 27

The Ministry of Energy and Mines should consider a more substantial Part 12 of the *HSR Code* to address problems specific to, and to simplify the application of, the *HSR Code* to the aggregate industry or create a wholly separate Code. Alternatively, the Ministry could publish a synopsis of the *HSR Code* specifically for the aggregate industry. Whatever option is selected the Ministry should define any permitting process provisions specific to the aggregate industry in the *HSR Code*.

RECOMMENDATION 36
SEE PAGE 27

The Panel recommends that the *Mines Act* be amended to add the authority to impose monetary penalties, consistent with other Provincial legislation such as the *Forest Practices Code Act*, for infractions of the *Mines Act* and related permits.

SECONDARY ACTIVITIES AT PITS AND QUARRIES

RECOMMENDATION 37
SEE PAGE 28

The Panel recommends that the screening, crushing and washing of primary aggregate materials at permitted aggregate extraction operations be considered an integral part of the extraction and not be subject to separate zoning.

RECOMMENDATION 38
SEE PAGE 28

The Panel encourages local governments to consider approving value-added activities such as asphalt and ready mix concrete plants at gravel pits and quarries where they can be regulated in a manner that minimizes unwanted impacts on surrounding land uses.

RECYCLING OF AGGREGATE

RECOMMENDATION 39
SEE PAGE 29

The Panel recommends exempting recycled aggregate from payment of aggregate production Fees as an incentive for expanded use. Communities should consider other incentives for recycled aggregate in order to manage long-term demand.

CROWN LAND

RECOMMENDATION 40
SEE PAGE 29

The Panel recommends that BCAL review the Crown land royalty structure and policy on a regional basis to ensure that Crown aggregate is available to the public at reasonable cost where it is needed.

RECOMMENDATION 41
SEE PAGE 29

BCAL should consider whether continuation of the existing *Land Act* provisions that prohibit the outright sale of Crown land for aggregate extraction is in the best interests of the Province.

RECOMMENDATION 42
SEE PAGE 30

BCAL should work with the Ministry of Energy and Mines to co-ordinate tenure term and mine life to promote more efficient resource extraction. BCAL should also work with local governments to determine future land uses consistent with local land use planning processes.

MINISTRY OF TRANSPORTATION AND HIGHWAYS

RECOMMENDATION 43
SEE PAGE 30

Ministry of Transportation and Highways aggregate operations, where the product is used solely by the Ministry or its agents for the construction and maintenance of public highways amenities, should be exempt from the Aggregate Resource Management Fee. Production from Ministry aggregate operations sold commercially, or used by Ministry contractors for non-Ministry work, should be subject to the Fee.

RECOMMENDATION 44
SEE PAGE 30

Contractors employed by MOTH to construct and maintain highways should pay the Fee on all aggregate production that does not come from pits and quarries owned by MOTH. Local governments should receive Aggregate Fund payments with respect to this production, but not for production from Ministry of Transportation and Highways' own aggregate operations.

RECOMMENDATION 45
SEE PAGE 30

BCAL and the Ministry of Transportation and Highways should jointly develop an acceptable process and policy guidelines for making decisions regarding the balancing of competing resource interests, such as forest values and potential heritage sites.

AGRICULTURAL AND FOREST LAND RESERVES

RECOMMENDATION 46
SEE PAGE 31

The Land Reserve Commission should consider developing specific policy to permit the use of Forest Reserve lands for aggregate production in areas where supply may be limited. Alternatively, the Commission should consider broader criteria for releasing land from the Forest Land Reserve where local aggregate demand is high.

RECOMMENDATION 47
SEE PAGE 31

The Land Reserve Commission should periodically review its requirements regarding the standards for returning the land to agricultural or forestry productivity, and the financial securities required for compliance, to ensure that they remain appropriate.

APPENDIX

THE PUBLIC CONSULTATION PROCESS

The Panel was asked to consult with, and accept submissions from, a range of people and organizations interested in planning, permitting and managing aggregate operations.

The existing review, approval and management processes remained in force during the Panel's deliberations. The Panel was not given authority to intervene in the existing process nor to make recommendations concerning the merits of specific aggregate proposals.

Panel members met on July 25, 2000 to begin the review and developed a schedule of public and stakeholder meetings to gather information. Over the following six months the Panel held public meetings throughout the province and met separately with many stakeholder groups. These groups included the environmental community, local governments, provincial agencies, Fisheries and Oceans Canada, industry representatives and concerned citizens. The public meetings and a representative selection of stakeholders who met with Panel members are listed below. In addition, the Panel Chair wrote to over one hundred First Nations to solicit their perspectives on aggregate issues.

A website was established to describe the Panel's mandate, publicize public meetings, solicit public input and post about 90 written submissions.

Public Meetings

The Panel held public meetings at 11 centres around the province in the fall of 2000. Each meeting was advertised in several local newspapers, usually twice over a seven to ten day period prior to the meeting. All the meetings were held in the evening to ensure maximum attendance. Attendance ranged from under 20 in some of the smaller communities to about 100 in the Lower Mainland. Each meeting featured presentations to the Panel by interested stakeholders followed by a lively discussion.

The Panel Chair attended all the public meetings. Meetings outside the Panel's three focus areas of the Lower Mainland, the Okanagan and southern Vancouver Island, were attended by one or two additional Panel members. Public meetings within the three focus areas were attended by most or all of the Panel members.

DATE	COMMUNITY	PANEL MEMBERS IN ATTENDANCE
September 25	Nelson	Lea, Kingsbury
September 26	Cranbrook	Lea, Kingsbury
October 3	Prince George	Lea, Carlson
October 5	Terrace	Lea, Carlson
October 10	Kelowna	Lea, Marr, Carlson, Kingsbury
October 11	Kamloops	Lea, Marr, Carlson
October 19	Sechelt	Lea, Marr, Carlson, Kingsbury
October 20	Abbotsford	Lea, Marr, Carlson, Kingsbury
November 6	Nanaimo	Lea, Marr, Carlson
November 7	Victoria	Lea, Marr, Carlson, Kingsbury
November 21	Coquitlam	Lea, Marr, Carlson, Kingsbury

In addition to the public meetings, the Panel set aside the afternoon and evening of November 27 in Vancouver to meet with environmental organizations. Forty-one invitations were sent by facsimile or mail to organizations primarily located in the Lower Mainland.

Written submissions

The Panel received about 90 written submissions, listed below. These submissions from stakeholders identified issues and, in many cases, recommended solutions. They were an important source of information. The Panel is grateful to those who took the time to prepare and send submissions.

DATE RECEIVED	SUBMITTED BY
July 25, 2000	Rick Simpson
August 20, 2000 and October 17, 2000	A & R Patschke
August 29, 2000	BC Road Builders and Heavy Construction Association
August 31, 2000	Association for the Protection of Rural Metchosin
September 5, 2000	District of Metchosin
September 19, 2000	Snow Valley Enterprises Ltd.
September 20, 2000	Morris Geological Co. Ltd.
September 21, 2000	D & G Construction Ltd.
September 21, 2000	D. Onions Holdings Ltd.
September 22, 2000	Morrissey Aggregates Ltd.
September 25, 2000	District of Salmon Arm
Undated	David E. Kampe
September 29, 2000	Johnson Contracting
September 29, 2000	Bob Griffin Trucking
September 29, 2000	Mike Collins
October 2, 2000	Anne Griffin
October 2, 2000	Lee Herberts
October 3, 2000	Ben Bodenhoff
October 4, 2000	Central Island Aggregate Producers
October 6, 2000	Corporation of the District of Peachland
October 8, 2000	Germaine Loran
October 10, 2000	City of Kelowna
October 10, 2000	District of Lake Country
October 10, 2000	The Langley Concrete Group
October 10, 2000	Regional District of Central Okanagan, City of Kelowna, District of Lake Country, District of Peachland
October 12, 2000	Webster's Corners Community Association
October 12, 2000	Regional District of East Kootenay
October 16, 2000	The Corporation of the District of Powell River
October 17, 2000	Nancy A. MacLarty
October 19, 2000	David Evanson
October 19, 2000	Maria Jeffries
October 19, 2000	Paul E. Clements

DATE RECEIVED	SUBMITTED BY
October 19, 2000	Ian C. Pepper
October 20, 2000	Central Valley Naturalists
October 20, 2000	Eric Gunderson
October 20, 2000	Corrinne Wright
October 20, 2000	Heather Morlacci
October 20, 2000	John Vissers, Sumas Mtn. Conservation Association
October 20, 2000	Spawn To Be Wild (The Angus Creek Monitoring Group
October 20, 2000	Richard Bogstie
October 20, 2000	John van Dongen
October 20, 2000	Fraser Valley Regional District
October 22, 2000	Hub City Paving Ltd.
October 23, 2000	Pas Lumber Company Ltd.
October 27, 2000	J.W. Murton & Associates Ltd.
October 30, 2000	Sunshine Coast Regional District
November 1, 2000	Natural Aggregates Ltd.
November 1, 2000	Serge Planidin
November 3, 2000	Van Isle Tree Farms Ltd.
November 3, 2000	Williamson and Associates
November 3, 2000	Parksville Streamkeepers Society
November 5, 2000	Robert D. Flitton
November 6, 2000	Regional District of Nanaimo
November 6, 2000	Kari Nelson
November 6, 2000	David Haynes
November 7, 2000	Sean Gibbs
November 8, 2000	Union of British Columbia Municipalities
November 12, 2000	Walter Neufield
November 15, 2000	Pacific Fisheries Resource Conservation Council
November 16, 2000	John Monteith
November 18, 2000	J.R. & Irene Breaks
November 20, 2000	Art Mendenhall
November 20, 2000	Aggregate Producers Association of B.C.
November 21, 2000	City of Coquitlam
November 21, 2000	Fin Donnelly
November 21, 2000	Barry McLean
November 21, 2000	Watershed Watch
November 21, 2000	Brian Weeks
November 21, 2000	Steve Mancinelli
November 21, 2000	BC and Yukon Building Trades Council
November 21, 2000	Allard Contractors
November 21, 2000	Burke Mountain Naturalists
November 21, 2000	B.C. Tap Water Alliance
November 22, 2000	Michael P. Smyth
November 24, 2000	Don Nikkel
November 27, 2000	Federation of BC Naturalists
November 27, 2000	White Rock and Surrey Naturalists
November 28, 2000	Don Gillespie
November 28, 2000	Cowichan Valley Regional District

DATE RECEIVED	SUBMITTED BY
November 29, 2000	Voices of the Englishman River (VOTER)
November 30, 2000	ARC Asphalt Recycling Corporation
December 2000	West Coast Environmental Law
December 8, 2000	Federation of Fly Fishers
December 4 , 2000	Department of Fisheries and Oceans
December 11, 2000	Powell River Regional District
December 14, 2000	Regional District of Okanagan-Similkameen
December 19, 2000	Regional District of North Okanagan
December 19, 2000	Regional District of Bulkley-Nechako
December 31, 2000	Central Coast Regional District
January 18, 2001	Lang Bay Aggregates

Stakeholder meetings

During the course of its review the Aggregate Advisory Panel met as a group or individually with many stakeholder groups. The following list is a sampling of those groups.

ENVIRONMENTAL GROUPS

- West Coast Environmental Law
- BC Watershed Stewardship Alliance
- Federation of BC Naturalists

FEDERAL GOVERNMENT

- Fisheries and Oceans Canada

PACIFIC FISHERIES RESOURCE CONSERVATION COUNCIL

PROVINCIAL MINISTRIES

- Ministry of Transportation and Highways
- Ministry of Environment, Lands and Parks
- Ministry of Finance
- Ministry of Attorney General
- Ministry of Forests
- Ministry of Energy and Mines
- Ministry of Municipal Affairs

PROVINCIAL AGENCIES

- British Columbia Assets and Land Corporation
- Land Reserve Commission
- BC Environmental Assessment Office
- BC Land Use Coordination Office

PRODUCERS

- Aggregate Producers Association of BC
- Central Island Aggregate Producers
- Prince George Aggregate Association
- Road Builders and Heavy Construction Association

UNIONS

- British Columbia and Yukon Territory Building and Construction Trades Council
- International Union of Operating Engineers

CIVIC GROUPS

- Union of British Columbia Municipalities
- Coastal Community Network

REGIONAL DISTRICTS

- Central Okanagan Regional District
- Regional District of Nanaimo
- Capital Regional District
- Greater Vancouver Regional District
- Regional District of Okanagan-Similkameen
- Cariboo Regional District
- Central Coast Regional District
- Fraser Valley Regional District
- Regional District of Kitimat-Stikine
- Sunshine Coast Regional District
- Cowichan Valley Regional District

MUNICIPALITIES

- City of Kelowna
- District of Powell River
- Town of Smithers
- City of Kamloops
- District of Squamish
- District of Kent
- District of Stewart
- District of Lake Country
- City of Terrace
- City of Prince George
- District of Metchosin
- District of Peachland
- District of Sechelt
- City of Parksville

OTHER PROVINCIAL JURISDICTIONS

- Ontario Ministry of Natural Resources; Land and Waters Branch
- Manitoba Ministry of Industry, Trade and Mines; Mines Branch